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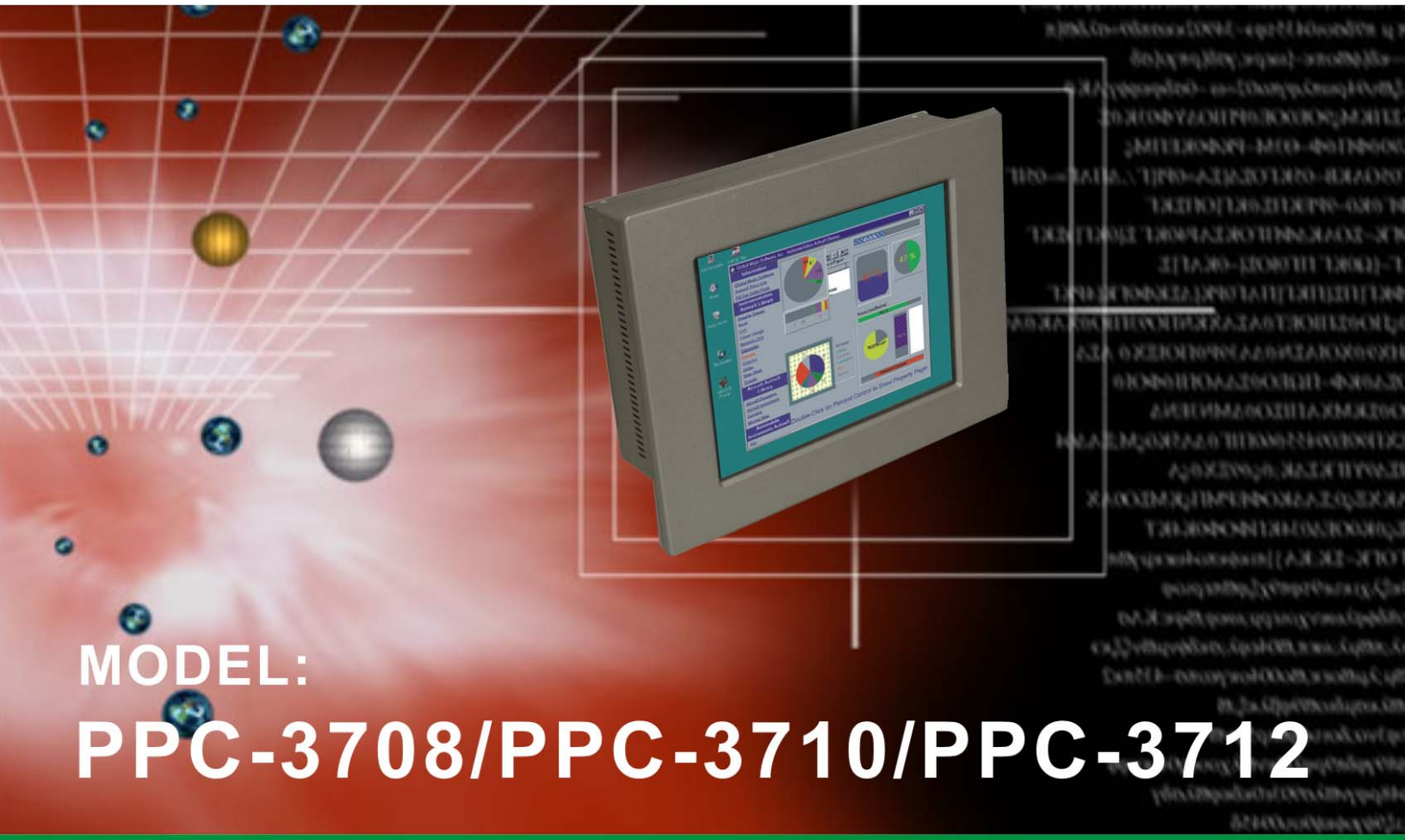

MODEL:

PPC-3708/PPC-3710/PPC-3712

Intel Pentium® M / Celeron® M Panel PC with TFT LCD , Touch Screen and IP65 Water Proof

User Manual

Rev. 1.0, December 2006

RoHS Lead Free

REVISION HISTORY

Title	PPC-3708/3710/3712 Flat Panel PC User Manual	
Revision Number	**Description**	**Date of Issue**
1.0	Initial release	December 2006

ABOUT THIS MANUAL

This document covers the description and installation instructions for the PPC-3708, PPC-3710, and PPC-3712 flat panel PC.

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PACKING LIST

Before installing the Panel PC, please make sure that the following items have been shipped:

- 1 x HDD IDE cable
- 1 x Jumper pack
- 1 x Panel mounting kit
- 1 x Power cord
- 1 x PS2 keyboard/mouse Y-cable
- 1 x Screw kit
- 1 x User manual and driver CD
- 1 x Wall mounting kit
- 1 x Slim CD-ROM installation kit (PPC-3712 only)
- 1 x 80W power adapter for socket type
- 1 x 60W power adapter for BGA type
- 1 x Touch screen driver CD (T-R models only)
- 1 x Touch pen (T-R models only)

If any of these items are missing or damaged, contact the distributor or sales representative immediately.

PRECAUTIONS

SAFETY PRECAUTIONS

1. Prior to installing, moving, and modifying the panel PC, make sure that the unit's power is turned off and the power cord is disconnected.
2. Do not apply voltage levels that exceed the specified voltage range. Doing so may cause fire or an electrical shock.
3. Electric shock can occur if the panel is opened. Do not drop or insert any objects into the ventilation openings of the panel PC.
4. Only qualified engineers from certified system integrators or VARs are allowed to make necessary functional modifications to the panel PC, e.g., adding a touch screen. IEI offers the customization service on a pre-order

basis.

5. If considerable amount of dust, water, or fluids entered the panel PC, turn off the power supply immediately, unplug the power cord, and contact the vendor.
6. Explosions may occur with installations in environments where flammable gases are present.
7. Fault-tolerant and failsafe designs should be implemented with the use of the series models on transportation vehicles, ships, safety/security devices, or medical devices not related to life-support functionalities. Users/integrators should take the responsibility for implementations with adequate levels of reliability and safety.
8. Preventive designs should be implemented so as to avoid the communications faults between the panel PC and the PC/workstation/terminals that controls it.

HANDLING PRECAUTIONS

1. Do not drop the panel PC against a hard surface. Doing so may damage the display.
2. Do not strike or exert excessive force onto the touch panel.
3. Touching the touch panel using a sharp object may damage the LCD panel.
4. Avoid environments exposed to direct sunlight, dust, or chemical vapors.
5. The panel PC is actively cooled. In no circumstances should the panel PC operate with the openings obstructed by foreign objects. However, the ambient temperature of the installation site should be observed and controlled to avoid overheating the panel PC.
6. Condensation might form inside the panel PC chassis if exposed to sudden changes in temperature.
7. Carefully route the power cord so that people cannot step on it. Do not place anything over the power cord.
8. If the equipment should be left unused for an extended period of time, disconnect it from the power source to avoid damage by transient over-voltage.
9. If any of the following situations arises, get the equipment checked by service personnel:
   - The power cord or plug is damaged.
   - Liquid has penetrated into the equipment.

- The equipment has been exposed to moisture.
- The equipment does not work properly, or the user cannot get it to work according to the user manual.
- The equipment has been dropped and damaged.
- The equipment shows obvious signs of breakage.

WARNING!

Any changes or modifications made to the equipment that are not expressly approved by the relevant standards could void the authority to operate the equipment.

ADDITIONAL INFORMATION

MAINTENANCE AND CLEANING

Note the following precautions before beginning to clean the Panel PC.

When cleaning any single part or component of the computer, please read and understand the details below fully.

- Except for the properly installed front LCD panel, never spray or squirt liquids directly onto any computer component. To clean the device, please rub it with a piece of dry and soft cloth or a slightly moistened cloth with the exterior casing.
- The interior of the Panel PC does not require cleaning. Keep fluids away from the Panel PC and the interior of it.
- Be cautious of the tiny removable components when using a vacuum cleaner to absorb the dirt on the floor.
- Turn the system off before cleaning up the Panel PC.
- Never drop any tiny objects through the openings of the Panel PC or get circuit board damp or wet.
- Be cautious of all kinds of cleaning solvents or chemicals when using it for the sake of cleaning. Some individuals may be allergic to the ingredients.
- Avoid any food, drink or cigarette around the Panel PC.

CLEANING TOOLS

Although many companies have created products to help improve the process of cleaning the computer and peripherals, users can also use household items to clean their computers and peripherals. Below is a list of items to use while cleaning the computer or computer peripherals.

Please keep in mind that some components in the computer may only be cleaned using a product designed for cleaning that component, if this is the case it will be mentioned in the cleaning tips.

- ***Cloth*** - A piece of cloth is the best tool to use when rubbing up a component. Although paper towels or tissues can be used on most hardware as well, it is recommended to rub it with a piece of cloth.
- ***Water or rubbing alcohol*** – Moisten a piece of cloth a bit with some water or rubbing alcohol and rub it on the computer.
- Unknown solvents may be harmful to the plastics parts.
- ***Vacuum cleaner*** - Absorb the dust, dirt, hair, cigarette particles, and other particles out of a computer can be one of the best methods of cleaning a computer. Over time these items can restrict the airflow in a computer and cause circuitry to corrode.
- ***Cotton swabs*** - Cotton swabs moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas in the keyboard, mouse, and other locations.
- ***Foam swabs*** - Whenever possible it is better to use lint free swabs such as foam swabs.

ESD PRECAUTIONS

Observe all conventional anti-ESD methods while handling the components contained within the LCD should the need arise for adding a functionality. The use of a grounded wrist strap and an anti-static work pad is recommended. Avoid dust and debris or other static-accumulating materials in the work area.

MANUAL CONVENTIONS

WARNING!

Warnings appear where overlooked details may cause damage to the equipment or result in personal injury. Warnings should be taken seriously. Warnings are easy to recognize. The word “warning” is written as “**WARNING**,” both capitalized and bold and is followed by text in italics. The italicized text is the warning message.

CAUTION!

Cautionary messages should also be heeded to reduce the chance of losing data or damaging the system. Cautions are easy to recognize. The word “caution” is written as “**CAUTION**,” both capitalized and bold and is followed by text in italics. The italicized text is the cautionary message.

NOTE:

These messages inform the reader of essential but non-critical information. These messages should be read carefully as any directions or instructions contained therein can avoid making mistakes. Notes are easy to recognize. The word “note” is written as “**NOTE**,” both capitalized and bold and is followed by text in italics. The italicized text is the cautionary message.

Lists

Bulleted Lists: Bulleted lists are statements of non-sequential facts that can be read in any order. Each statement is preceded by a black square “■” or bullets in other shapes.

Numbered Lists: Numbered lists describe sequential steps should be followed in order.

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Chapter

1

Introduction

1.1 Overview

The PPC-3708/PPC-3710/PPC-3712 flat panel PC is a flexible, multi-functional flat panel PC that can be applied in diverse operational environments and implemented in multi-faceted applications. The PPC-3708/PPC-3710/PPC-3712 comes fully kitted with a high-performance motherboard and a host of other peripheral interface connectors. The PPC-3708/PPC-3710/PPC-3712 is designed for ease of use and easy installation.

1.1.1 Model Variation

1.1.1.1 PPC-3708 Model Variation

Sixteen IEI PPC-3708 models are available. The models are listed in **Table 1-1**.

PPC-3708	CPU	Socket/ BGA	Luminance	Touch screen	Power
GS/8522	Pentium M / Celeron M FSB 400MHz	Socket 479	220 cd/m^2	No	80W power adapter
GHS/8522	Pentium M / Celeron M FSB 400MHz	Socket 479	450 cd/m^2	No	80W power adapter
GMS/8522	Pentium M / Celeron M FSB 400MHz	Socket 479	220 cd/m^2	No	9~36V DC input
GHMS/8522	Pentium M / Celeron M FSB 400MHz	Socket 479	450 cd/m^2	No	9~36V DC input
GS/8522/T-R	Pentium M / Celeron M FSB 400MHz	Socket 479	220 cd/m^2	Yes	80W power adapter
GHS/8522/T-R	Pentium M / Celeron M FSB 400MHz	Socket 479	450 cd/m^2	Yes	80W power adapter
GMS/8522/T-R	Pentium M / Celeron M FSB 400MHz	Socket 479	220 cd/m^2	Yes	9~36V DC input
GHMS/8522/T-R	Pentium M / Celeron M FSB 400MHz	Socket 479	450 cd/m^2	Yes	9~36V DC input
GS/8522-1GZ	Celeron M 1GHz zero cache	BGA	220 cd/m^2	No	60W power adapter

GHS/8522-1GZ	Celeron M 1GHz zero cache	BGA	450 cd/m^2	No	60W power adapter
GMS/8522-1GZ	Celeron M 1GHz zero cache	BGA	220 cd/m^2	No	9~36V DC input
GHMS/8522-1GZ	Celeron M 1GHz zero cache	BGA	450 cd/m^2	No	9~36V DC input
GS/8522-1GZ/T-R	Celeron M 1GHz zero cache	BGA	220 cd/m^2	Yes	60W power adapter
GHS/8522-1GZ/T-R	Celeron M 1GHz zero cache	BGA	450 cd/m^2	Yes	60W power adapter
GMS/8522-1GZ/T-R	Celeron M 1GHz zero cache	BGA	220 cd/m^2	Yes	9~36V DC input
GHMS/8522-1GZ/T-R	Celeron M 1GHz zero cache	BGA	450 cd/m^2	Yes	9~36V DC input

Table 1-1: PPC-3708 Model Variation

1.1.1.2 PPC-3710 Model Variation

Sixteen IEI PPC-3710 models are available. The models are listed in **Table 1-2**.

PPC-3710	CPU	Socket/ BGA	Luminance	Touch screen	Power
GS/8522	Pentium M / Celeron M FSB 400MHz	Socket 479	220 cd/m^2	No	80W power adapter
GHS/8522	Pentium M / Celeron M FSB 400MHz	Socket 479	450 cd/m^2	No	80W power adapter
GMS/8522	Pentium M / Celeron M FSB 400MHz	Socket 479	220 cd/m^2	No	9~36V DC input
GHMS/8522	Pentium M / Celeron M FSB 400MHz	Socket 479	450 cd/m^2	No	9~36V DC input
GS/8522/T-R	Pentium M / Celeron M FSB 400MHz	Socket 479	220 cd/m^2	Yes	80W power adapter
GHS/8522/T-R	Pentium M / Celeron M FSB 400MHz	Socket 479	450 cd/m^2	Yes	80W power adapter

PPC-3710	CPU	Socket/ BGA	Luminance	Touch screen	Power
GMS/8522/T-R	Pentium M / Celeron M FSB 400MHz	Socket 479	220 cd/m^2	Yes	9~36V DC input
GHMS/8522/T-R	Pentium M / Celeron M FSB 400MHz	Socket 479	450 cd/m^2	Yes	9~36V DC input
GS/8522-1GZ	Celeron M 1GHz zero cache	BGA	220 cd/m^2	No	60W power adapter
GHS/8522-1GZ	Celeron M 1GHz zero cache	BGA	450 cd/m^2	No	60W power adapter
GMS/8522-1GZ	Celeron M 1GHz zero cache	BGA	220 cd/m^2	No	9~36V DC input
GHMS/8522-1GZ	Celeron M 1GHz zero cache	BGA	450 cd/m^2	No	9~36V DC input
GS/8522-1GZ/T-R	Celeron M 1GHz zero cache	BGA	220 cd/m^2	Yes	60W power adapter
GHS/8522-1GZ/T-R	Celeron M 1GHz zero cache	BGA	450 cd/m^2	Yes	60W power adapter
GMS/8522-1GZ/T-R	Celeron M 1GHz zero cache	BGA	220 cd/m^2	Yes	9~36V DC input
GHMS/8522-1GZ/T-R	Celeron M 1GHz zero cache	BGA	450 cd/m^2	Yes	9~36V DC input

Table 1-2: PPC-3710 Model Variation

1.1.1.3 PPC-3712 Model Variation

Eight IEI PPC-3712 models are available. The models are listed in **Table 1-3**.

PPC-3712	CPU	Socket/ BGA	Touch screen	Power
GS/8522	Pentium M / Celeron M FSB 400MHz	Socket 479	No	80W power adapter

GS/8522/T-R	Pentium M / Celeron M FSB 400MHz	Socket 479	Yes	80W power adapter
GMS/8522	Pentium M / Celeron M FSB 400MHz	Socket 479	No	9~36V DC input
GMS/8522/T-R	Pentium M / Celeron M FSB 400MHz	Socket 479	Yes	9~36V DC input
GS/8522-1GZ	Celeron M 1GHz zero cache	BGA	No	60W power adapter
GS/8522-1GZ/T-R	Celeron M 1GHz zero cache	BGA	Yes	60W power adapter
GMS/8522-1GZ	Celeron M 1GHz zero cache	BGA	No	9~36V DC input
GMS/8522-1GZ/T-R	Celeron M 1GHz zero cache	BGA	Yes	9~36V DC input

Table 1-3: PPC-3712 Model Variation

1.1.2 Applications

The flat panel PC is designed for rigorous industrial environments where it may be exposed to both heat and moisture. Its durability and strength also makes it an ideal choice for public access computers. Some possible applications include:

- Automated manufacturing processes
- Public information gathering point

1.1.3 Features

Some of the standard features of the PPC-3708/PPC-3710/PPC-3712 flat panel PC include:

- Intel Pentium M / Celeron M CPU upto 2.1GHz for socket type
- Onboard Celeron M 1GHz zero cache for BGA type
- Preinstalled 512MB DDR 400 SODIMM memory module
- Aluminum die-casting IP65, high brightness industrial panel
- Serial ATA interface support

- Gigabit Ethernet support
- Simplified installation process
- Low power consumption and thermal distribution
- RoHS compliance

1.2 External Overview

1.2.1 General Description

The flat panel PC is a rectangular cubic structure that comprises of a screen, rear panel, top panel, bottom panel and two side panels (left and right). An aluminum frame surrounds the front screen. The rear panel provides screw holes for a wall-mounting bracket, and an arm mounting interface. The bottom panel provides access to external interface connectors that include LAN, USB 2.0, audio, VGA, serial port connectors and CF card slot.

1.2.2 Front Panel

The front side of the PPC-3708/PPC-3710/PPC-3712 is a flat panel TFT LCD screen surrounded by an aluminum frame.

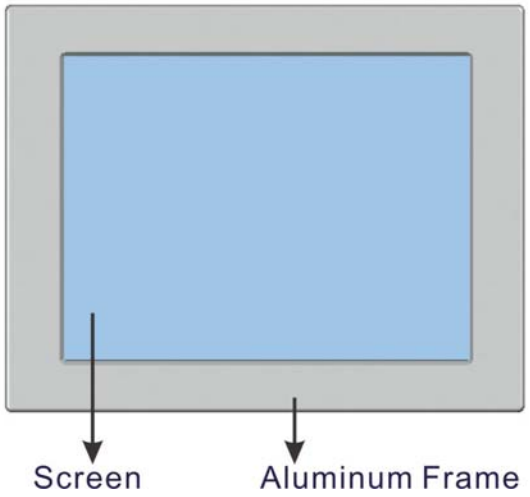

Figure 1-1: Front View

1.2.3 Rear Panel

The rear panel provides access to a fan ventilation vent and four retention screw holes that support a wall-mounting bracket. **Figure 1-2** shows the retention screw holes of the PPC-3712.

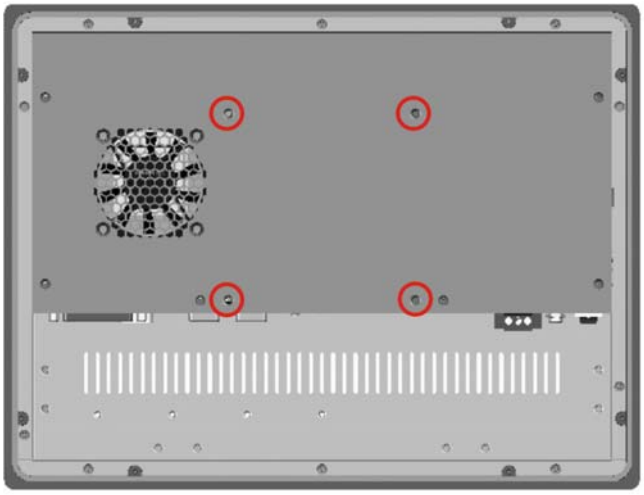

Figure 1-2: PPC-3712 Wall-Mounting Bracket Retention Screw Holes

1.2.4 Bottom Panel

All peripheral device connectors are located on the bottom panel of the flat panel PC. The following sections describe the bottom panel variants.

1.2.4.1 PPC-3708 Bottom Panel

The following is a list of the bottom panel peripheral device connectors used on the PPC-3708 flat panel PC. The **Figure 1-3** shows the location of these connectors.

- 1 x RS-232/422/485 port
- 2 x RS-232 ports
- 3 x Audio jacks (Line-in, Line-out and MIC-in)
- 1 x PS/2 keyboard/mouse connector
- 1 x AC power adapter connector
- 1 x VGA connector
- 1 x RJ-45 GbE connector

- 4 x USB 2.0 connectors
- 1 x Compact Flash slot
- 1 x 9~36V DC input connector (optional)
- 1 x Power switch

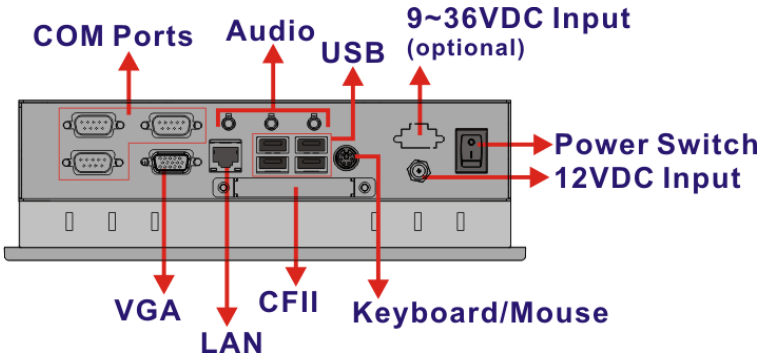

Figure 1-3: PPC-3708 Bottom View

1.2.4.2 PPC-3710 Bottom Panel

The following is a list of the bottom panel peripheral device connectors used on the PPC-3710 flat panel PC. The **Figure 1-4** shows the location of these connectors.

- 1 x RS-232/422/485 port
- 2 x RS-232 ports
- 3 x Audio jacks (Line-in, Line-out and MIC-in)
- 1 x PS/2 keyboard/mouse connector
- 1 x AC power adapter connector
- 1 x VGA connector
- 1 x RJ-45 GbE connector
- 4 x USB 2.0 connectors
- 1 x Compact Flash slot
- 1 x 9~36V DC input connector (optional)
- 1 x Power switch

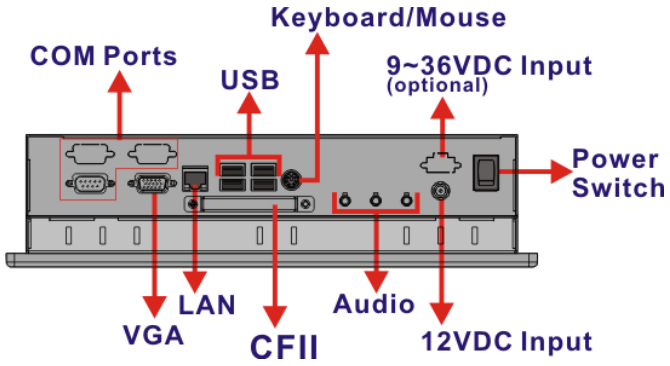

Figure 1-4: PPC-3710 Bottom View

1.2.4.3 PPC-3712 Bottom Panel

The following is a list of the bottom panel peripheral device connectors used on the PPC-3712 flat panel PC. The **Figure 1-5** shows the location of these connectors.

- 1 x Parallel port connector
- 1 x RS-232/422/485 port
- 3 x RS-232 ports
- 3 x Audio jacks (Line-in, Line-out and MIC-in)
- 1 x PS/2 keyboard/mouse connector
- 1 x AC power adapter connector
- 1 x VGA connector
- 1 x RJ-45 GbE connector
- 4 x USB 2.0 connectors
- 1 x Compact Flash slot
- 1 x 9~36V DC input connector (optional)
- 1 x Power switch

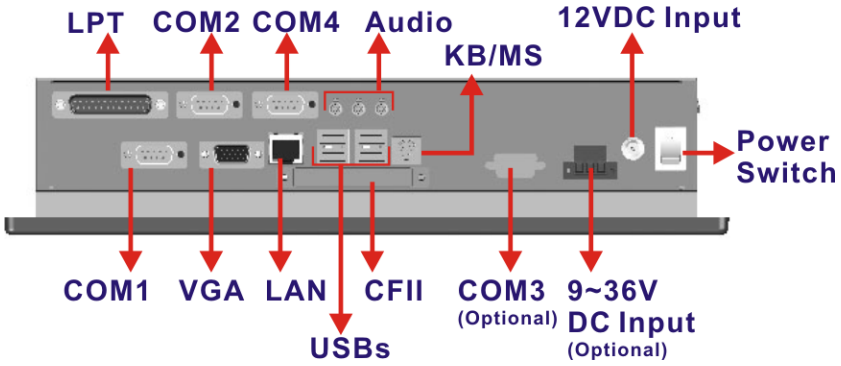

Figure 1-5: PPC-3712 Bottom View

1.2.5 Side Panel

The both sides panel of the flat panel PC contain some vents for ventilation. The left side panel of PPC-3712 also provides access to the slim type CD-ROM bay (**Figure 1-6**).

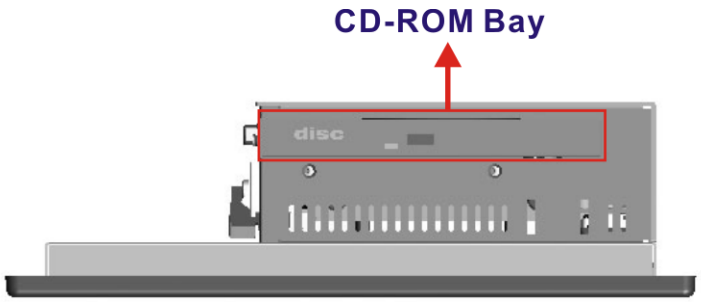

Figure 1-6: PPC-3712 Left View

1.2.6 Frame

An aluminum frame surrounds the TFT LCD screen. The aluminum frames of the PPC-3710 and PPC-3712 have small screw holes that are used when the flat panel PC is mounted into a rack or cabinet. These screws are circled in **Figure 1-7** and **Figure 1-8**.

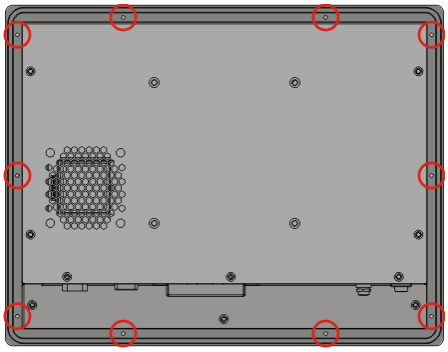

Figure 1-7: PPC-3710 Frame Rear View (10 panel mount retention screw holes)

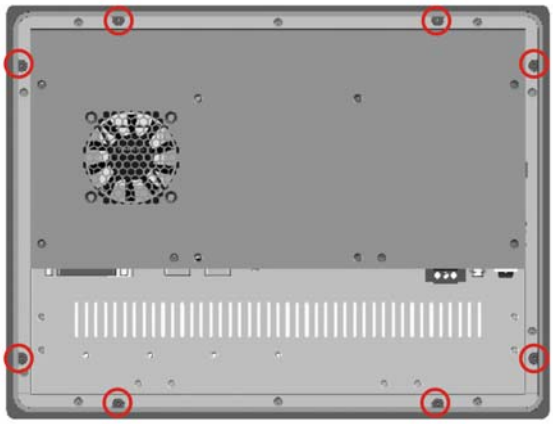

Figure 1-8: PPC-3712 Frame Rear View (8 panel mount retention screw holes)

1.3 Specifications

1.3.1 Preinstalled Hardware Components

The flat panel PC comes with the following components:

- 1 x Motherboard (preinstalled)
- 1 x TFT LCD screen (preinstalled)
- 1 x Power module (preinstalled)
- 1 x Power adapter

The technical specifications for these components and the system are shown in the sections below.

1.3.2 System Specifications

The technical specifications for the PPC-3708, PPC-3710 and PPC-3712 system are listed in **Table 1-4**.

SPECIFICATION	PPC-3708	PPC-3710	PPC-3712
Front Panel	Aluminum Front Panel		
Chassis	Heavy-duty Steel		
LCD Panel	8.4” TFT LCD	10.4” TFT LCD	12.1” TFT LCD
Resolution	800 x 600 (SVGA)	800 x 600 (SVGA)	800 x 600 (SVGA)
Brightness	220 cd/m^2 or 450 cd/m^2	230 cd/m^2 or 400 cd/m^2	400 cd/m^2
Backlight MTBF	20,000 hrs	20,000 hrs	50,000 hrs
Contrast Ratio	500:1		
Touch Screen	Optional Resistive type touch screen with RS-232 interface		
Memory	Preinstalled 512MB DDR 400 SODIMM memory module		
Display	Support Dual Display		
Drive Bay	1 x 2.5” HDD bay	1 x 2.5” HDD bay	1 x slim type CD-ROM bay 1 x 2.5” HDD bay
Power	80W power adapter for socket type 60W power adapter for BGA type		
Mounting Feature	Panel, Arm, Wall, or Rack		
Color	Silver (PANTONE PMS-8001)		
Operating Temperature	0~50^{0}C		
Relative Humidity	5 ~ 95%, non-condensing		

SPECIFICATION	PPC-3708	PPC-3710	PPC-3712
Vibration	5 - 17Hz, 0.1" double amplitude displacement. 17 - 640Hz, 1.5G acceleration, peak to peak.		
Shock	10G Acceleration, peak to peak (11ms)		
Dimension (mm)	243.57 x 178 x 75.2	311.5 x 242 x 77.8	340 x 260 x 73.4
Net/Gross Weight	2.2/4.4 Kg	3.4/5.8 Kg	6/8 Kg

Table 1-4: System Specifications

1.3.3 Motherboard Specifications

The flat panel PC comes with a NANO-8522 motherboard. The technical specifications of the motherboard are listed in **Table 1-5**.

SPECIFICATION	DETAIL
CPU	Onboard Intel Celeron M 1GHz zero cache or Socket-479 base Intel Pentium M / Celeron M, FSB 400 MHz
Northbridge	852GM
Southbridge	ICH4
Memory	1 x DDR 266/200 SODIMM socket up to 1GB
BIOS	AMI BIOS Label
Display	CRT integrated in Intel 852GM LVDS Dual 18-bit TTL LCD integrated in Intel 852GM
SSD	1 x CFII
Audio	AC' 97 Codec
Ethernet	GbE (Intel 82541)
COM	4 x RS-232 ports (1 for optional touch screen)

USB 2.0	4 x USB 2.0 connectors
Drive Interfaces	2 x SATA drive connectors
LPT	1 x LPT connector
Extension	1x PCI-104

Table 1-5: Motherboard Specifications

1.3.4 Flat Panel Screen Specifications

1.3.4.1 PPC-3708 Flat Panel Screen

The PPC-3708 comes with a 8.4" TFT LCD monitor at the front of the flat panel PC. The specifications for the LCD monitor are shown in **Table 1-6** below.

SPECIFICATION	GS/GMS Model	GHS/GHMS Model
Model	AUO-G084SN03	AUO-G084SN05
Size	8.4"	8.4"
Resolution	SVGA (800 x 600)	SVGA (800 x 600)
Active Area (mm)	170.4 x 127.8	170.4 x 127.8
Pixel Pitch (mm)	0.213 x 0.213	0.213 x 0.213
Mode	TN	TN
Number of Colors	262K	262K
Color Saturation (NTSC%)	45	45
View Angel (H/V)	130/110	120/100
Brightness (cd/m^2)	220	450
Contrast Ratio	500:1	500:1
Response Time (ms) (at 25°C)	35	35
Power Consumption (W)	3.3	5.8

SPECIFICATION	GS/GMS Model	GHS/GHMS Model
Interface	1ch LVDS	1ch LVDS
Supply Voltage (V)	3.3	3.3
Backlight	1 CCFL	2 CCFL
Outline Dimensions (mm)	203.0 x 142.0 x 5.7	203.0 x 142.5 x 8.0
Weight (g)	215	260

Table 1-6: 8.4" TFT LCD Monitor Specifications

1.3.4.2 PPC-3710 Flat Panel Screen

The PPC-3710 comes with a 10.4" TFT LCD monitor at the front of the flat panel PC. The specifications for the LCD monitor are shown in **Table 1-7** below.

SPECIFICATION	GS/GMS Model	GHS/GHMS Model
Model	AUO-G104SN03	AUO-G104SN02
Size	10.4"	10.4"
Resolution	SVGA (800 x 600)	SVGA (800 x 600)
Active Area (mm)	211.2 x 158.4	211.2 x 158.4
Pixel Pitch (mm)	0.264	0.264
Mode	TN	TN
Number of Colors	262K	262K
Color Saturation (NTSC%)	45	45
View Angel (H/V)	120/100	120/100
Brightness (cd/m^2)	230	400
Contrast Ratio	500:1	500:1
Response Time (ms) (at 25°C)	35	35

SPECIFICATION	GS/GMS Model	GHS/GHMS Model
Power Consumption (W)	2.52	8.3
Interface	1ch LVDS	1ch LVDS
Supply Voltage (V)	3.3	3.3
Backlight	1 CCFL	2 CCFL
Outline Dimensions (mm)	236.0 x 174.0 x 5.6	243.0 x 184.0 x 10.6
Weight (g)	280	485

Table 1-7: 10.4" TFT LCD Monitor Specifications

1.3.4.3 PPC-3712 Flat Panel Screen

The PPC-3712 comes with a 12.1" TFT LCD monitor at the front of the flat panel PC. The specifications for the LCD monitor are shown in **Table 1-8** below.

SPECIFICATION	DETAILS
Model	AUO-G121SN01
Size	12.1"
Resolution	SVGA (800 x 600)
Active Area (mm)	246.0 x 184.5
Pixel Pitch (mm)	0.307
Mode	TN
Number of Colors	262K
Color Saturation (NTSC%)	55
View Angel (H/V)	140/110
Brightness (cd/m^2)	400
Contrast Ratio	500:1

Response Time (ms) (at 25°C)	35
Power Consumption (W)	7.3
Interface	1ch LVDS
Supply Voltage (V)	3.3
Backlight	2 CCFL
Outline Dimensions (mm)	279.0 x 209.0 x 11.0
Weight (g)	660

Table 1-8: 12.1" TFT LCD Monitor Specifications

1.3.5 Power Adapter Specifications

1.3.5.1 80W Power Adapter

The flat panel PC models with socket type CPU are shipped with an 80W power adapter.

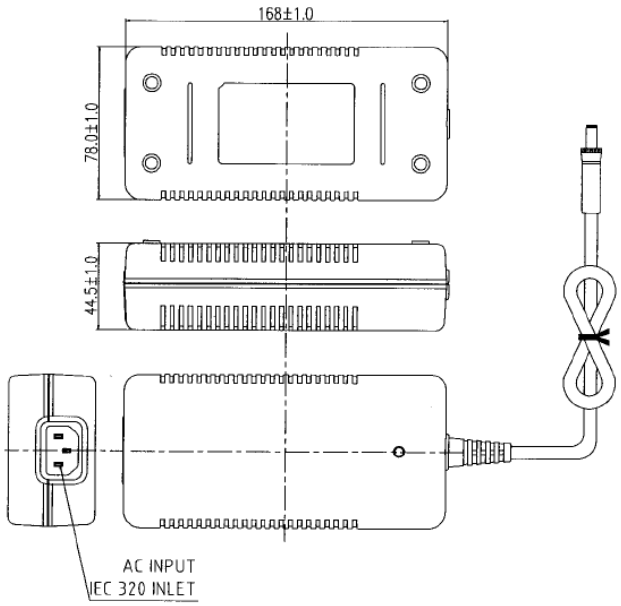

Figure 1-9: 80W Power Adapter Dimensions

The specifications for the adapter are listed in **Table 1-9**:

Output	**Nominal**	12.0V	
	Load Regulation	±5%	
	Ripple/Noise	120mV	
	Min.	0A	
	Max.	6.66A	
Protection	**Short Circuit**	The power supply is protected from short circuit at any outputs with no damage.	
	Over-Voltage	13.44~15.84V	
Time	**Hold Up**	16mS	
Input	**Min.**	90V	
	Nominal	100V AC ~ 240V AC	
	Max.	260V	
	Frequency	47Hz ~ 63Hz	
	Inrush Current	30A at 230VAC input	
	Leakage Current	0.75mA Max.	
	Efficiency	70%	
Environment	**Temperature**	Operating	0ºC ~ 70ºC
		Storage	-40ºC ~ 85ºC
	Relative Humidity	Operating (non-condensing)	10% ~ 95%
		Storage (non-condensing)	5% ~ 95%
Reliability	**MTBF**	100,000 hours per MIL-HDBK-217 at 25°C and 100 % of rated load.	

Table 1-9: 80W Power Adapter Specifications

1.3.5.2 60W Power Adapter

The flat panel PC models with BGA type CPU are shipped with a 60W power adapter.

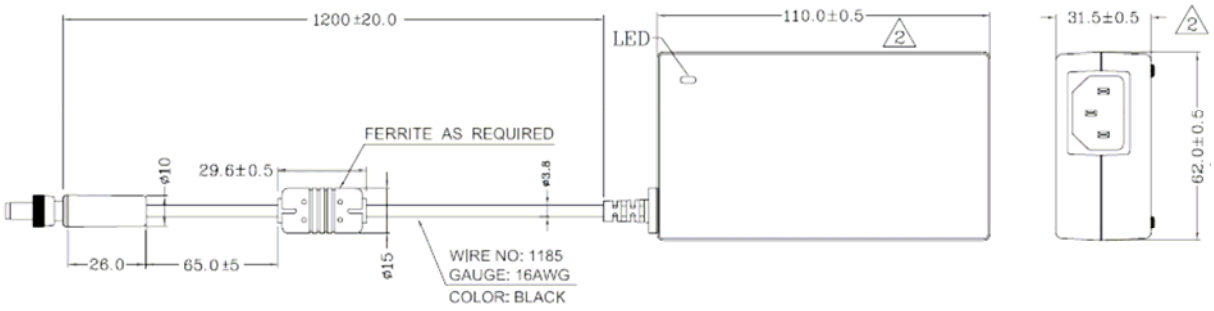

Figure 1-10: 60W Power Adapter Dimensions

The specifications for the adapter are listed in **Table 1-10**:

Output	**Nominal**	12.0V
	Regulation	11.4V to 12.6V
	Ripple/Noise	150mV
	Min.	0A
	Max.	5.0A
Protection	**Short Circuit**	The power supply is protected from short circuit at any outputs with no damage.
	Over-Voltage	11.4Vdc~12.6Vdc
Time	**Hold Up**	8mS minimum
Input	**Min.**	90V
	Nominal	115V AC ~ 230V AC
	Max.	264V

	Frequency	47Hz ~ 63Hz	
	Inrush Current	100A for 220V	
	Input Line Current	1.5A Max. for 115V; 1.0A Max. for 230V	
	Efficiency	80%	
Environment	**Temperature**	Operating	0ºC ~ 40ºC
		Storage	-20ºC ~ 65ºC
	Relative Humidity	Operating (non-condensing)	20% ~ 80%
		Storage (non-condensing)	10% ~ 90%
	Shock	**Storage:** 40 G maximum, 1/2 sine wave, 6 msec on any axis.	
		Operating: 10 G maximum, 1/2 sine wave, 6 msec on any axis.	
Reliability	**MTBF**	60,000 hours per MIL-HDBK-217 at 25°C and 100 % of rated load.	

Table 1-10: 60W Power Adapter Specifications

1.3.6 Power Module Specifications

The GMS and GHMS models of the PPC-3708/PPC-3710/PPC-3712 flat panel PC support a 9V~36V DC input. The input support depends on the IDD-936160 power module installed in the system. The specifications for the IDD-936160 are shown in **Table 1-11**.

Model Name:	**IDD-936160**
Input	9VDC~36VDC
Output:	

12V	5A (Max.)
Max. Total Output:	60W
Performance Characteristics:	
Noise & Ripple:	< 300mV
Line Regulation:	< 200mV
Load Regulation	<85mV
Efficiency:	Min. 80%
Dimensions:	82mm x 25mm
Weight:	28g
Operating Temperature:	--40°C~85°C

Table 1-11: DC-to-DC Power Module Specifications

1.4 Dimensions

1.4.1 PPC-3708 Dimensions

The dimensions of the PPC-3708 flat panel PC are shown in **Figure 1-11** below.

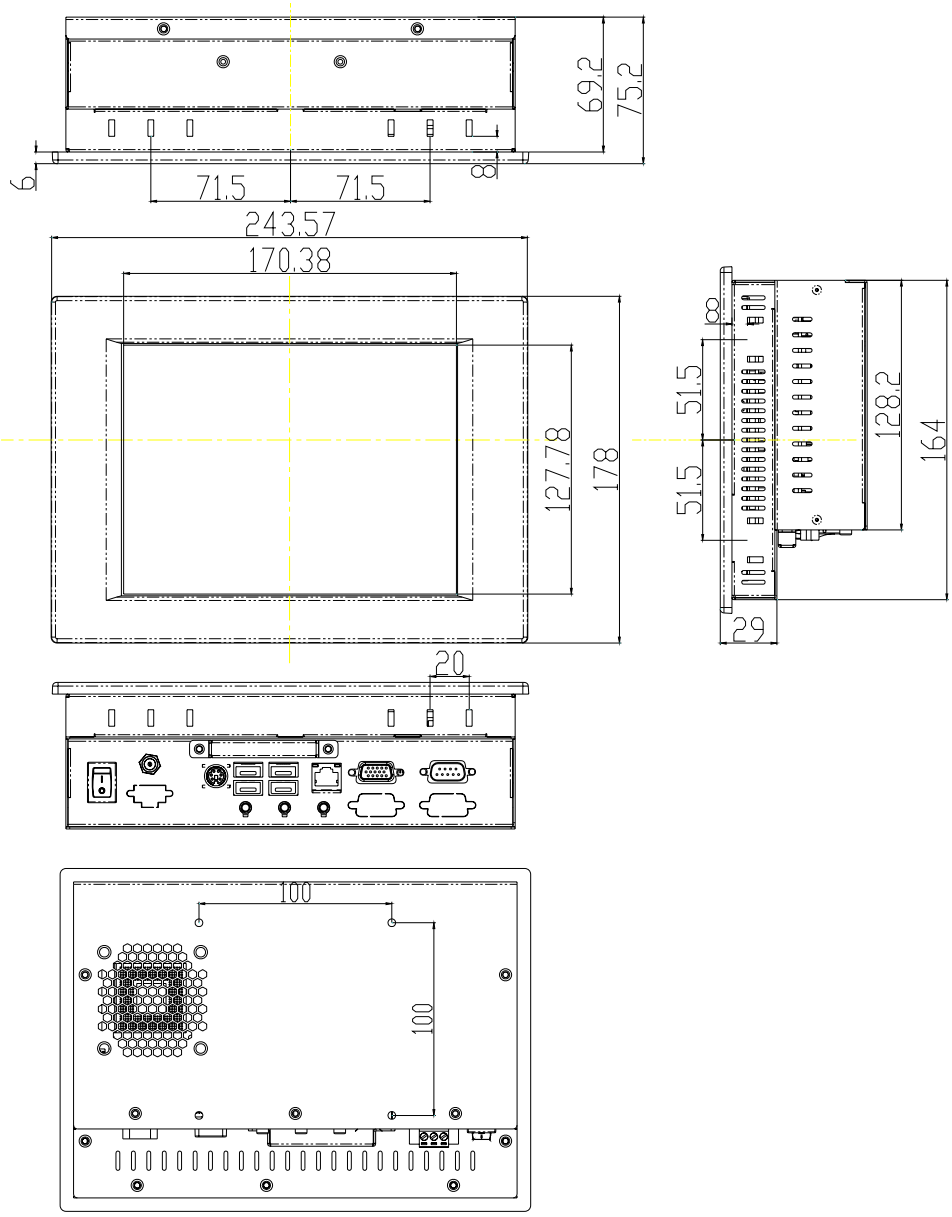

Figure 1-11: PPC-3708 Dimensions (units in mm)

1.4.2 PPC-3710 Dimensions

The dimensions of the PPC-3710 flat panel PC are shown in **Figure 1-12** below.

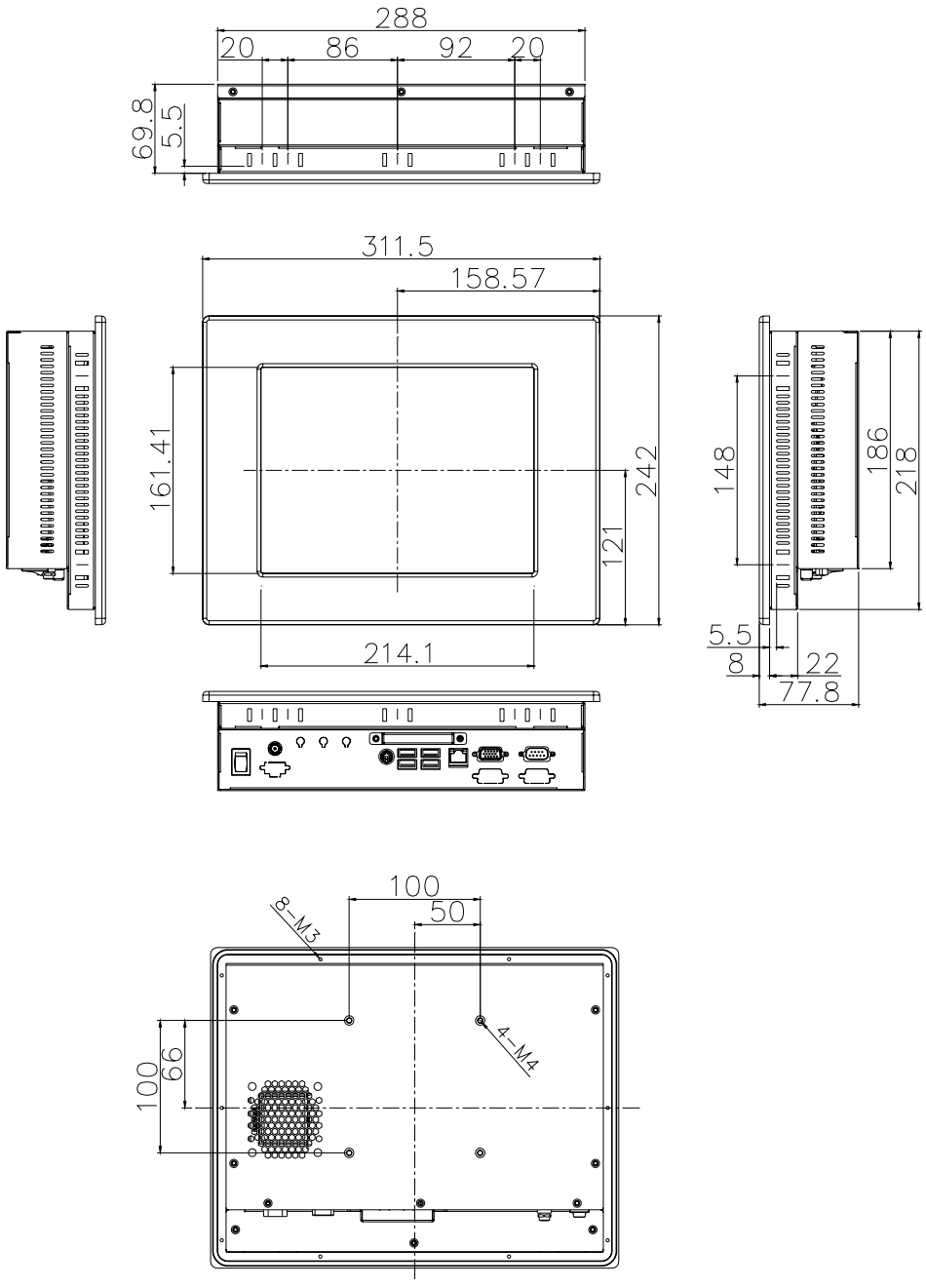

Figure 1-12: PPC-3710 Dimensions (units in mm)

1.4.3 PPC-3712 Dimensions

The dimensions of the PPC-3712 flat panel PC are shown in **Figure 1-13** below.

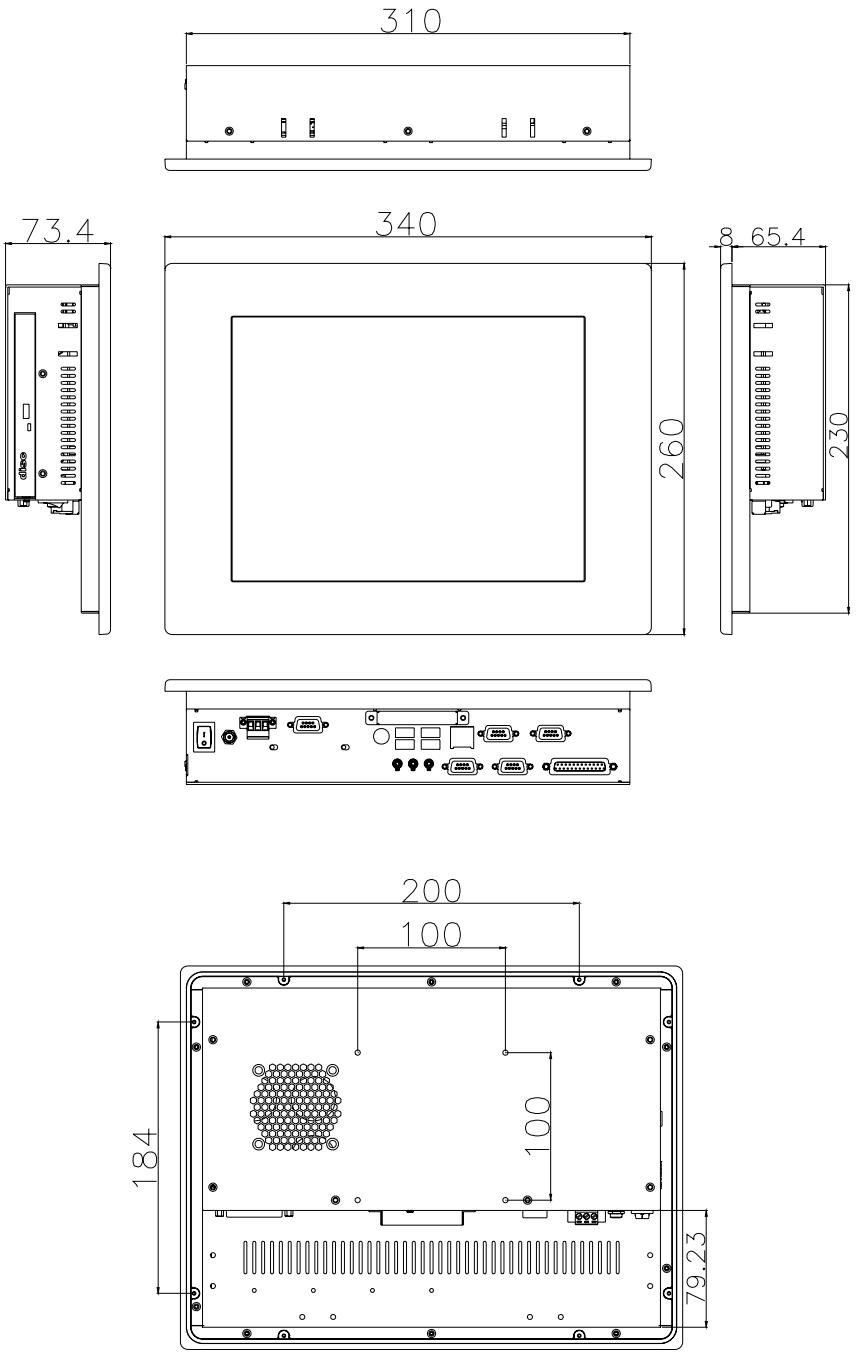

Figure 1-13: PPC-3712 Dimensions (units in mm)

Chapter

2

NANO-8522 Motherboard

2.1 Introduction

The PPC-3708, PPC-3710 and PPC-3712 flat panel PC all contain a NANO-8522 motherboard. The motherboard is the heart of any computer and is responsible for transmitting, receiving and processing data as well as driving the different onboard devices. This chapter gives a brief introduction to the NANO-8522 motherboard. For more complete details on the connectors and the different implementations of the NANO-8522, please refer to the NANO-8522 user guide.

2.2 CPU Support

The NANO-8522 installed in the flat panel PC supports socket 479, Intel Pentium M / Celeron M FSB 400 MHz CPU or onboard Intel Celeron M 1GHz zero cache CPU.

2.3 Onboard Chipsets

2.3.1 Northbridge and Southbridge Chipsets

The following chipsets are preinstalled on the board:

- **Northbridge**: Intel 852GM
- **Southbridge**: ICH4

The following two sections (**Section 2.3.2** and **Section 2.3.3**) list some of the features of the 852GM and the ICH4 chipsets. For more information on these two chipsets please refer to the Intel website.

2.3.2 852GM Northbridge Chipset

The 852GM northbridge chipset comes with the following features:

- Supports Intel® NetBurst® micro-architecture
- 400 MHz system bus delivers a high-bandwidth connection between the processor and the platform
- Supports integrated graphics utilizing Intel® Extreme Graphics 2 technology
- Three USB host controllers provide high performance peripherals with 480 Mbps of bandwidth, while enabling support for up to six USB 2.0 ports.

- The latest AC ’97 implementation delivers 20-bit audio for enhanced sound quality and full surround-sound capability.
- LAN Connect Interface (LCI) provides flexible network solutions such as 10/100 Mbps Ethernet and 10/100 Mbps Ethernet with LAN manageability
- Dual Ultra ATA/100 controllers, coupled with the Intel® Application Accelerator supports faster IDE transfers to storage devices
- Intel Application Accelerator software provides additional performance over native ATA drivers by improving I/O transfer rates and enabling faster O/S load time, resulting in accelerated boot times

2.3.3 ICH4 Southbridge Chipset

The ICH4 southbridge chipset comes with the following features:

- PCI Local Bus Specification, Revision 2.2-compliant with support for 33 MHz PCI operations.
- ACPI Power Management Logic Support
- Enhanced DMA controller, Interrupt controller, and timer functions
- Integrated IDE controller supports Ultra ATA100/66/33
- USB host interface with support for 6 USB ports; 3 UHCI host controllers; 1 EHCI high-speed
- USB 2.0 Host controller
- Integrated LAN controller
- System Management Bus (SMBus) Specification, Version 2.0 with additional support for I2C devices
- Supports Audio Codec ’97, Revision 2.3 specification
- Low Pin Count (LPC) interface
- Firmware Hub (FWH) interface support
- Alert On LAN* (AOL) and Alert On LAN 2* (AOL2)

2.4 Graphics Support

The Intel® Extreme Graphics 2 is integrated on the Intel® 852GM Northbridge chipset. The Intel® Extreme Graphics 2 features are listed below.

- **Enhanced Rapid Pixel and Texel Rendering**: Optimized visual quality and performance from the addition of hardware to support of texel formatting, bicubic filter, color blending accuracy, and video mixing render, resulting in optimized visual quality and performance.
- **Zone Rendering 2 Technology**: Enhances the performance of zone rendering by using larger zones and new commands that improve graphics pipeline efficiency.
- **Dynamic Video Memory Technology v2.0**: Increases total system performance by optimizing the efficiency of AGP dynamic video memory by increasing its size of Video RAM allocation to 96 MB.
- **Enhanced Intelligent Memory Management**: Improves memory bandwidth efficiency and platform performance by improving the memory management arbitration between CPU, system memory and graphics memory.

Intel® Extreme Graphics 2 specifications are listed below:

- Enhanced 2D:
  - 256-bit internal path
  - 8/16/32bpp
  - DirectDraw*, GDI, GDI+
  - Anti-aliased text support
  - Alpha blending
  - Alphas stretch blitter
  - Hardware alpha blended RGB cursor
  - Color space conversion
  - 5x2 overlay support
  - Rotate, scale and translate operations
- High-performance 3D:
  - 256-bit internal path
  - 32bpp/ 24ZorW/ 8 Stencil

- DX7*/DX8*/OGL*1.1
- DXTn texture compression
- Up to 4 textures / pixel on a single pass
- Cubic reflection map
- Embossed/DOT3 bump mapping
- Multi-texture
- DOT3 bump-mapping
- Point sprites

- Video and Display:
  - DirectShow*/DirectVA*
  - Hardware motion compensation support for DVD playback
  - 4x2 overlay filter
  - 350 MHz DAC frequency
  - Maximum DVO pixel rate of up to 330MP/s
  - Flat panel monitors and TV-out support via AGP Digital Display (ADD) cards
  - 350 MHz DAC for 1800x1440 @ 85Hz max CRT resolution or 2048x1536@60Hz max FP resolution
  - Synchronous display for dual monitor capabilities
  - 350MHz RAMDAC for up to QXGA analog monitor support
  - Dual DVO ports for up to QXGA digital display support
  - Multiple display types (LVDS, DVI, TV-out, CRT)

2.5 Peripheral Device Interfaces, Connectors, and Slots

The peripheral device connectors, interfaces and slots on the NANO-8522 motherboard are listed in the sections below.

2.5.1 OEM Options

Many of the peripheral device connectors listed below are not connected to any devices. These connectors are reserved for OEM customizations. For a customized option, please contact the vendor, reseller or IEI sales representative.

2.5.2 Internal Slots

The slots listed below can all be found on the NANO-8522 motherboard.

- 1 x 200-pin DDR SODIMM socket
- 1 x CFII slot

2.5.3 Internal Peripheral Device Connectors

The peripheral device connectors listed below are located on the NANO-8522 motherboard. Pinouts for these connectors can be found in ***Appendix A***.

- 1 x 12V power connector
- 1 x 4-bit GPIO connector
- 1 x ATX power button connector
- 1 x ATX power connector
- 1 x Audio connector
- 1 x Battery connector
- 1 x DIO connector
- 1 x Fan connector
- 1 x IDE device connector
- 1 x Keyboard/mouse connector
- 1 x LED connector
- 1 x LCD LVDS interface connector
- 1 x Parallel port connector
- 1 x Reset connector
- 2 x Serial ATA connectors
- 3 x Serial port connectors
- 2 x USB 2.0 connectors

2.5.4 External Peripheral Device Connectors

The peripheral device connectors listed below are located on the rear panel of the NANO-8522 motherboard. Pinouts for these connectors can be found in ***Appendix A***.

- 1 x Serial port connector (COM)
- 1 x VGA connector

- 1 x RJ-45 Ethernet connector
- 4 x USB 2.0 ports
- 1 x Keyboard/Mouse connector

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Chapter

3

Installation and Configuration

3.1 Installation Precautions

When installing the flat panel PC, please follow the precautions listed below:

- **Power turned off**: When installing the flat panel PC make sure the power is off. Failing to turn off the power may cause severe injury to the body and/or damage to the system.
- **Certified Engineers**: Only certified engineers should install and modify onboard functionalities.
- **Mounting**: The flat panel PC is a heavy device. When mounting the system onto a rack, panel, wall or arm please make sure that at least two people are assisting with the procedure.
- **Anti-static Discharge**: If a user open the rear panel of the flat panel PC, to configure the jumpers or plug in added peripheral devices, ground themselves first and wear and anti-static wristband.

3.2 Preinstalled Components

The following components are all preinstalled.

- Motherboard
- TFT LCD screen
- 512MB DDR400 SODIMM memory
- Power switch

Preinstalled OEM customizations may include the following.

- 2.5” HDD
- Resistive type touch screen
- Power module
- CD drive (PPC-3712 Only)

Installation of some of the components are described in **the following sections.**

3.3 Installation and Configuration Steps

The following installation steps must be followed.

Step 1: Unpack the flat panel PC

Step 2: Set the jumper settings

Step 3: Install CPU and CPU cooler (/8522 and /8522/T-R models only)

Step 4: Install HDD and CD drive

Step 5: Mount the flat panel PC

Step 6: Connect peripheral devices to the bottom panel of the flat panel PC

Step 7: Configure the system

3.4 Unpacking

To unpack the flat panel PC, follow the steps below:

WARNING!

The front side LCD screen has a protective plastic cover stuck to the screen. Only remove the plastic cover after the flat panel PC has been properly installed. This ensures the screen is protected during the installation process.

Step 1: Use box cutters, a knife or a sharp pair of scissors that seals the top side of the external (second) box.

Step 2: Open the external (second) box.

Step 3: Use box cutters, a knife or a sharp pair of scissors that seals the top side of the internal (first) box.

Step 4: Lift the monitor out of the boxes.

Step 5: Remove both polystyrene ends, one from each side.

Step 6: Pull the plastic cover off the flat panel PC.

Step 7: Make sure all the components listed in the packing list are present.

3.4.1 Packing List

The flat panel PC is shipped with the following components:

- 1 x HDD IDE cable
- 1 x Jumper pack
- 1 x Panel mounting kit
- 1 x Power cord
- 1 x PS2 keyboard/mouse Y-cable
- 1 x Screw kit
- 1 x User manual and driver CD
- 1 x Wall mounting kit
- 1 x Slim CD-ROM installation kit (PPC-3712 Only)
- 1 x 80W power adapter for socket type
- 1 x 60W power adapter for BGA type
- 1 x Touch screen driver CD (T-R models only)
- 1 x Touch pen (T-R models only)

If any of these items are missing or damaged, contact the distributor or sales representatives immediately.

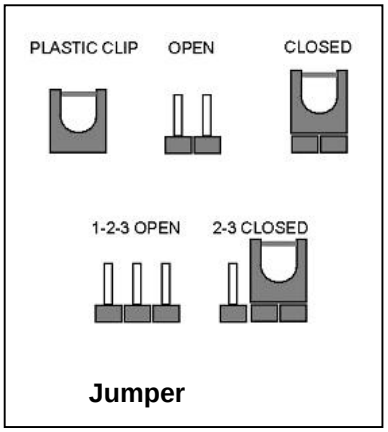
3.5 Jumper Settings

NOTE:

These jumper settings and the jumper locations are described in detail in the User Manual that came with the NANO-8522 motherboard. Please refer to this manual for a more detailed understanding of the jumper settings

NOTE:

A jumper is a metal bridge that is used to close an electrical circuit. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To CLOSE/SHORT a jumper means connecting the pins of the jumper with the plastic clip and to OPEN a jumper means removing the plastic clip from a jumper.



The NANO-8522 comes with four jumpers. They are listed below.

- CF card setup (JP1)
- Clear CMOS (JP4)
- COM2 RS232/RS422/RS485 selector (JP2)
- LCD Voltage selector (JP6)

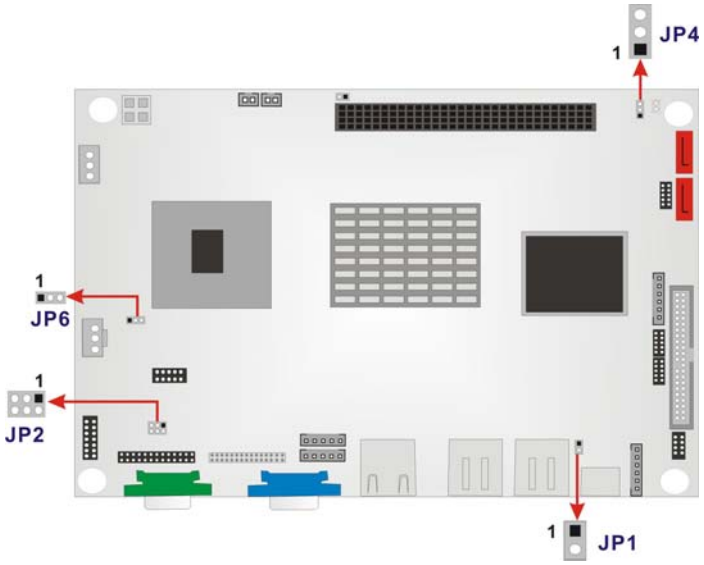


Figure 3-1: Jumper Locations

3.5.1 Remove the Back Cover

3.5.1.1 PPC-3708 Back Cover Removal

The back cover of the PPC-3708 is secured to the chassis with seven retention screws, five on the rear panel and two on the top panel (**Figure 3-2**). Remove the seven retention screws and lift the cover off the PPC-3708.

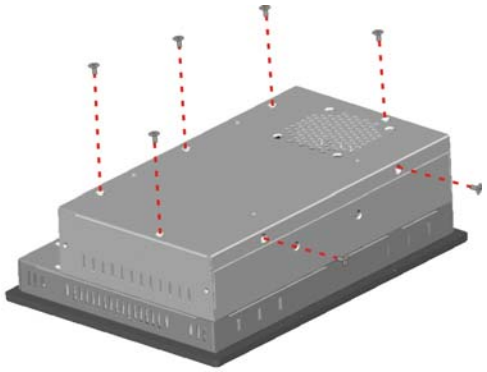


Figure 3-2: PPC-3708 Back Cover Retention Screws

3.5.1.2 PPC-3710 Back Cover Removal

The back cover of the PPC-3710 is secured to the chassis with ten retention screws, seven on the rear panel and three on the top panel (**Figure 3-3**). Remove the ten retention screws and lift the cover off the PPC-3710.

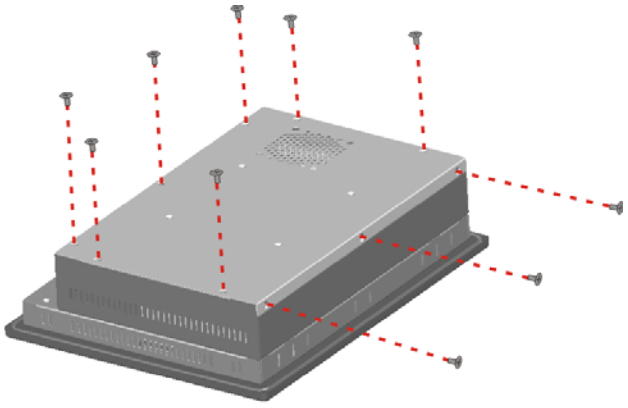


Figure 3-3: PPC-3710 Back Cover Retention Screws

3.5.1.3 PPC-3712 Back Cover Removal

The back cover is secured to the chassis with nine retention screws, six on the rear panel and three on the top panel (**Figure 3-4**). Remove the nine retention screws and lift the cover off the PPC-3712.

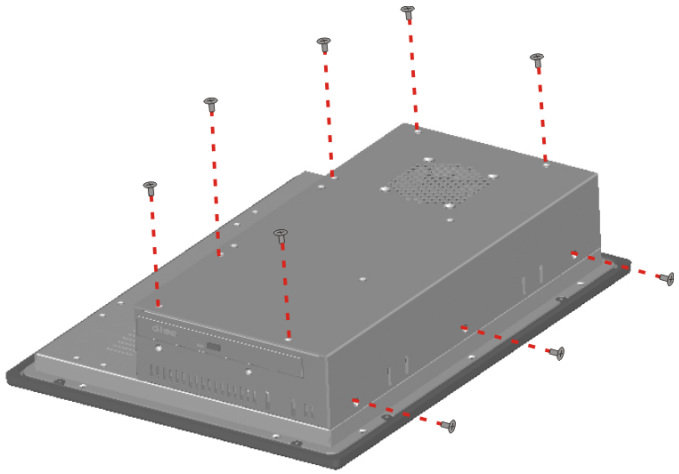


Figure 3-4: PPC-3712 Back Cover Retention Screws

3.5.2 JP1: CF Card Setup

The CF Card Setup jumper configures a CF card as either the slave or the master.

JP1	DESCRIPTION
Open	Slave (Default)
Close	Master

Table 3-1: CF Card Setup Jumper Settings

3.5.3 JP4: Clear CMOS Setup

If the motherboard fails to boot due to improper BIOS settings, use this jumper to clear the CMOS data and reset the system BIOS information. To do this, use the jumper cap to close pins 2 and 3 for a few seconds then reinstall the jumper clip back to pins 1 and 2.

If the “CMOS Settings Wrong” message displays during the boot up process, try to correct the fault by pressing the F1 to enter the CMOS Setup menu. Then do one of the following:

- Enter the correct CMOS setting
- Load Optimal Defaults
- Load Failsafe Defaults.

After one of the above has been done, save the changes and exit the CMOS Setup menu.

JP4	DESCRIPTION
1 - 2	Normal (Default)
2 – 3	Clear CMOS

Table 3-2: Clear CMOS Jumper Settings

3.5.4 JP6: LCD Voltage Setup

WARNING!

Do not change this voltage. This voltage has been preset and is compatible with the currently installed TFT LCD screen. Change this jumper setting may cause damage to the system.

The LCD Voltage Setup jumper sets the voltage for the LCD screen. This setting MUST NOT be changed.

JP6	DESCRIPTION
1-2	LCDVCC = +3.3V (default)
2-3	LCDVCC = +5V

Table 3-3: LCD Voltage Setup Jumper Settings

3.5.5 JP2: COM Port Jumper Setting

The COM Port jumper configures the COM2 serial port.

JP2	DESCRIPTION
1-2 closed	RS232 (default)
3-4 closed	RS422
5-6 closed	RS485

Table 3-4: JP2 Jumper Settings

3.6 CPU and CPU Cooler Installation

3.6.1 CPU Installation

WARNING!

CPUs are expensive and sensitive components. When installing the CPU, please be careful not to damage it in anyway. Make sure to install it properly and ensure that a heat sink and CPU cooling fan is properly installed before running the CPU card or else both the CPU and the board will be damaged.

To install an Intel 479-pin CPU onto the motherboard, follow the steps below:

Step 1: **Unlock the CPU retention screw.** When shipped, the retention screw of the CPU socket should be in the unlocked position. If it is not in the unlocked position, use a screwdriver to reposition the screw in an unlocked position. (See **Figure 3-5**)

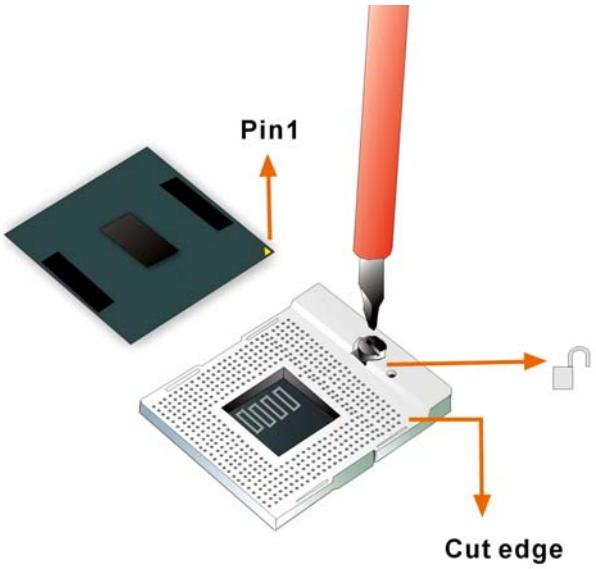


Figure 3-5: Make sure the CPU socket retention screw is unlocked

Step 2: **Inspect the CPU socket** Make sure there are no bent pins and make sure the socket contacts are free of foreign material. If any debris is found, remove it with compressed air.

Step 3: **Orientate the CPU properly**. Make sure the IHS (Integrated Heat Sink) side is facing upward.

Step 4: **Correctly position the CPU.** Match the Pin 1 mark with the cut edge on the CPU socket.

Step 5: **Align the CPU pins.** Carefully align the CPU pins with the holes in the CPU socket.

Step 6: **Insert the CPU.** Gently insert the CPU into the socket. If the CPU pins are properly aligned, the CPU should slide into the CPU socket smoothly

Step 7: **Lock the retention screw.** Rotate the retention screw into the locked position. (See **Figure 3-6**)

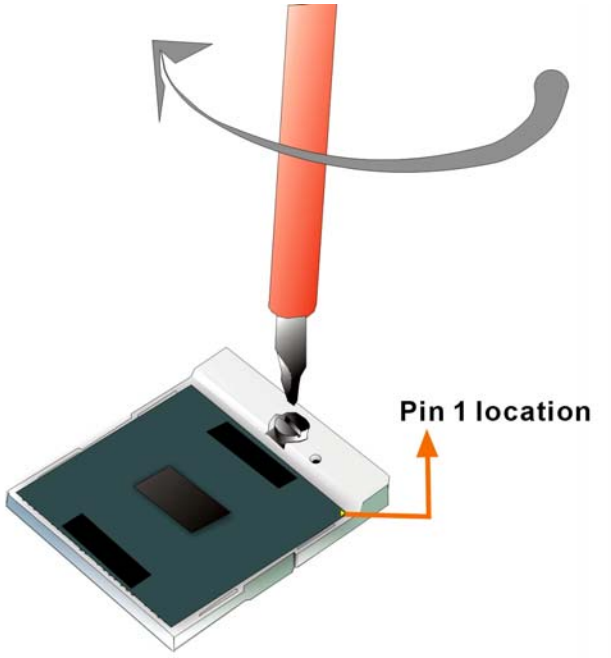


Figure 3-6: Lock the CPU Socket Retention Screw

3.6.2 Cooling Kit (CF-479B-RS) Installation

Figure 3-7: IEI CF-479B-RS Cooling Kit

IEI provides a cooling kit designed for socket 479 CPUs. (See **Figure 3-7**) The cooling kit is comprised of a CPU heat sink and a cooling fan.

NOTE:

The CF-479B-RS heatsink comes with a sprayed layer of thermal paste. Make sure not to accidentally wipe away the thermal paste while unpacking or installing the heatsink. Thermal paste between the CPU and the heatsink is important for optimum heat dissipation.

To install the CF-479B-RS cooling kit, please follow the steps below.

Step 1: **Place the cooling kit onto the CPU**. Make sure that the CPU cable can be properly routed when the cooling kit is installed.

Step 2: **Properly align the cooling kit**. Make sure its four threaded screw fasteners can pass through the pre-drilled holes on PCB.

Step 3: **Secure the cooling kit**. From the solder side of the PCB, align the provided nut caps to the heatsink screw threads that protrude through the PCB holes. Without over tightening the nut caps, insert them onto the protruding screw threads to secure the cooling kit to the PCB board. (See **Figure 3-8**)

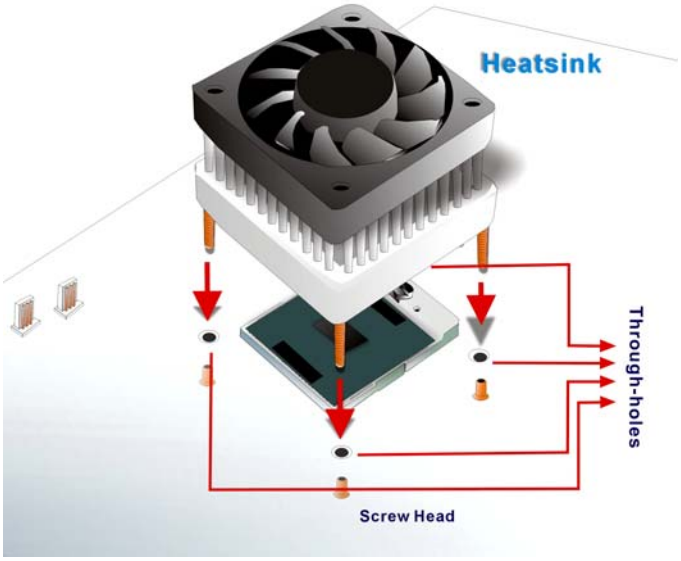


Figure 3-8: Securing the Cooling Kit

Step 4: **Connect the fan cable**. Connect the cooling kit fan cable to the FAN1 connector

on the motherboard. Carefully route the cable and avoid heat generating chips and fan blades. (See **Figure 3-9**)

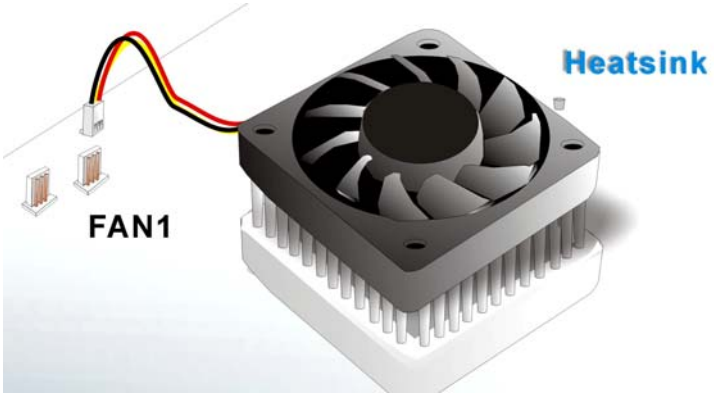


Figure 3-9: Connect the cooling fan cable

NOTE:

A 512MB SODIMM memory module is already preinstalled on the solder side of the motherboard. After installing the CPU and CPU cooler (if necessary), the panel PC shall be able to run properly.

3.7 HDD Installation

3.7.1 PPC-3708 HDD Installation

To install the HDD into the PPC-3708, please follow the steps below:

Step 1: Remove the back cover. See **Section 0** above.

Step 2: Remove the HDD bracket from the PPC-3708. The HDD bracket is attached on the PPC-3708 with four retention screws, two on the top panel (**Figure 3-10**) and two inside the chassis (**Figure 3-11**). Remove the four retention screws and lift the bracket off the panel PC.

Figure 3-10: PPC-3708 HDD Bracket Retention Screws (Tope Panel)

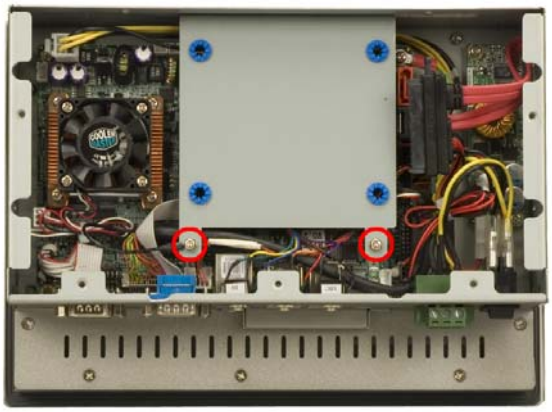


Figure 3-11: PPC-3708 HDD Bracket Retention Screws (Inside)

Step 3: Attach the HDD bracket to the HDD. To do this, align the four retention screw holes in the HDD bracket with the retention screw holes on the bottom of the HDD. Insert four retention screws into the HDD bracket. (**Figure 3-12**).

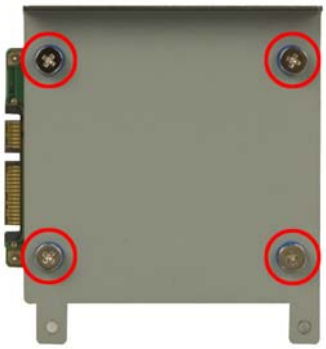


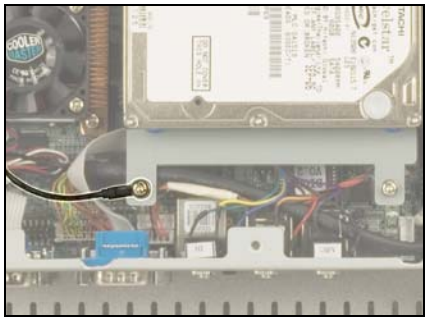
Figure 3-12: PPC-3708 HDD Retention Screws

Step 4: Install the HDD into the PPC-3708 by aligning the retention screw holes in the

HDD bracket with the retention screw holes on the panel PC. Insert the four retention screws.

CAUTION!

When inserting the bottom left retention screw back to the PPC-3708, please reattach the grounding cable to the retention screw.



Step 5: Connect the IDE/SATA cable from the IDE/SATA connector on the motherboard to the rear of HDD.

3.7.2 PPC-3710 HDD Installation

To install the HDD into the PPC-3710, please follow the steps below:

Step 1: Remove the back cover. See **Section 0** above.

Step 2: Remove the HDD bracket from the PPC-3710. The HDD bracket is attached on the PPC-3710 with four retention screws inside the chassis (**Figure 3-13**). Remove the four retention screws and lift the bracket off the panel PC.

Figure 3-13: PPC-3710 HDD Bracket Retention Screws

Step 3: Attach the HDD bracket to the HDD. To do this, align the four retention screw holes in the HDD bracket with the retention screw holes on the bottom of the HDD. Insert four retention screws into the HDD bracket. (**Figure 3-14**).

Figure 3-14: PPC-3710 HDD Retention Screws

Step 4: Install the HDD into the PPC-3710 by aligning the retention screw holes in the HDD bracket with the retention screw holes on the panel PC. Insert the four retention screws.

Step 5: Connect the IDE/SATA cable from the IDE/SATA connector on the motherboard to the rear of HDD.

3.7.3 PPC-3712 HDD Installation

To install the HDD, please follow the steps below:

Step 1: Remove the back cover. See **Section 0** above.

Step 2: Attach the HDD brackets to the HDD. To do this, align the two retention screw holes in each HDD bracket with the retention screw holes on the side of the HDD. Insert two retention screws into both brackets on both sides of the HDD (**Figure 3-15**).

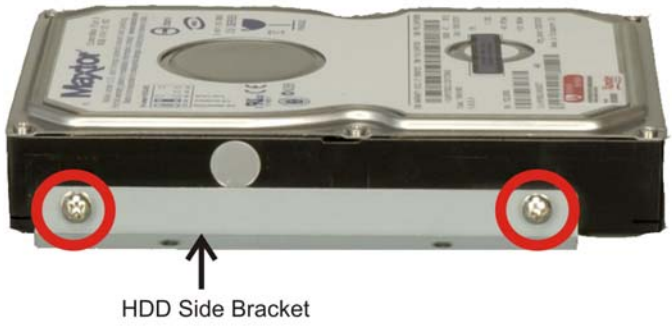


Figure 3-15: PPC-3712 HDD Bracket Retention Screws

Step 3: Install the HDD into the PPC-3712 by aligning the retention screw holes in the base of the HDD brackets with the retention screw holes on the metal sheet. Insert the four retention screws, two into the base of each HDD bracket (**Figure 3-16**.)

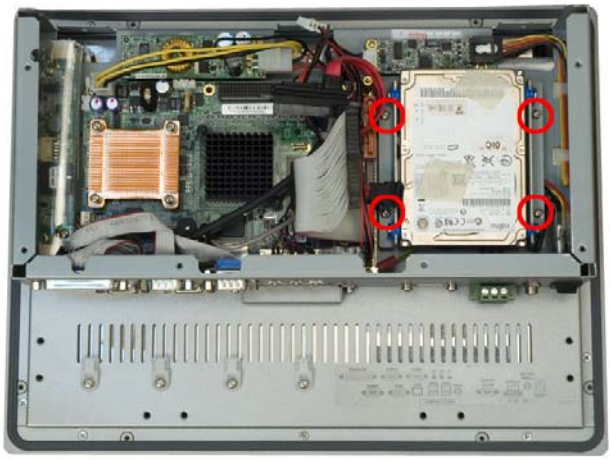


Figure 3-16: PPC-3712 HDD Retention Screws

Step 4: Connect the IDE/SATA cable from the IDE/SATA connector on the motherboard to the rear of HDD.

3.8 CD Drive Installation (PPC-3712 Only)

To install the CD drive into the PPC-3712, please follow the steps below:

Step 1: Attach the CD drive adapter to the CD drive by aligning the two retention screw holes in the CD drive adapter with the retention screw holes on the rear side of the CD drive. Place the two spacers between the CD drive and CD drive adapter. Insert two retention screws into the adapter (**Figure 3-17**).

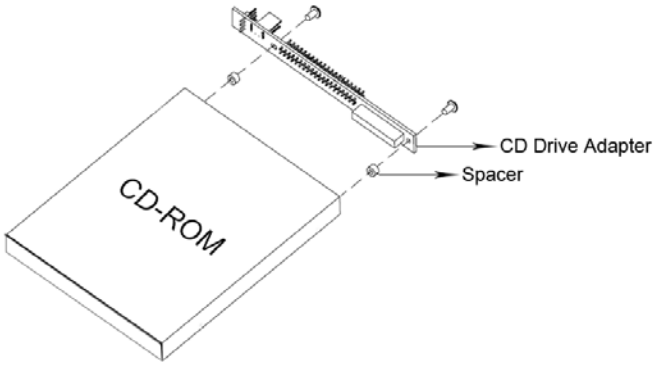


Figure 3-17: CD Drive Adapter Installation

Step 2: Attach the CD drive bracket to the CD drive. To do this, align the four retention

screw holes in the CD drive bracket with the retention screw holes on the side of the CD drive. Insert four retention screws into the bracket on both sides of the HDD (**Figure 3-18**).

Figure 3-18: CD Drive Bracket Retention Screws

Step 3: Remove the back cover. See **Section 0** above.

Step 4: Install the CD drive into the PPC-3712 by aligning the retention screw holes in the sides of the CD drive bracket with the retention screw holes on the left panel, the bottom panel and inside the chassis (**Figure 3-19**). Insert the five retention screws.

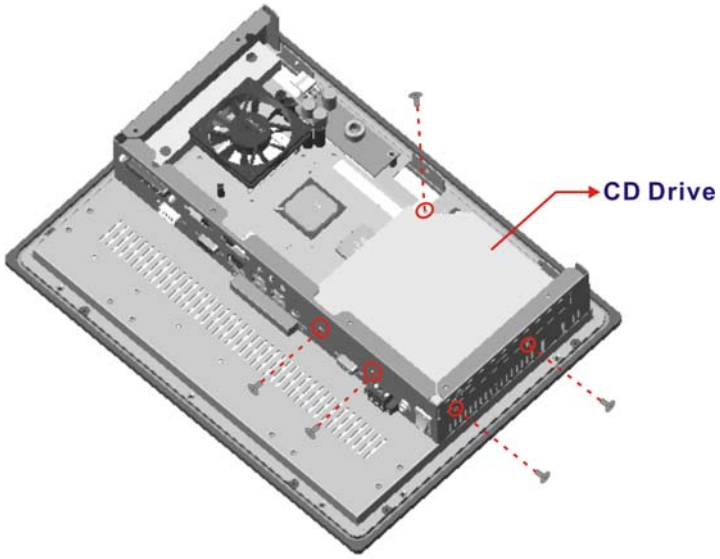


Figure 3-19: PPC-3712 CD Drive Retention Screws

Step 5: Connect the IDE ribbon cable and power cable from the connectors on the motherboard to the rear of the CD drive.

3.9 Mounting the System

WARNING!

When mounting the flat panel PC onto an arm, onto the wall or onto a panel, it is better to have more than one person to help with the installation to make sure the flat panel PC does not fall down and get damaged.

The four methods of mounting the flat panel PC are listed below.

- Wall mounting
- Panel mounting
- Arm mounting
- Rack mounting

The four mounting methods are described below.

3.9.1 Wall Mounting

To mount the PPC-3708/PPC-3710/PPC-3712 flat panel PC onto a wall, please follow the steps below.

Step 1: Select the location on the wall for the wall-mounting bracket.

Step 2: Carefully mark the locations of the four bracket screw holes on the wall.

Step 3: Drill four pilot holes at the marked locations on the wall for the bracket retention screws.

Step 4: Align the wall-mounting bracket screw holes with the pilot holes.

Step 5: Secure the mounting-bracket to the wall by inserting the retention screws into the four pilot holes and tightening them (**Figure 3-20**).

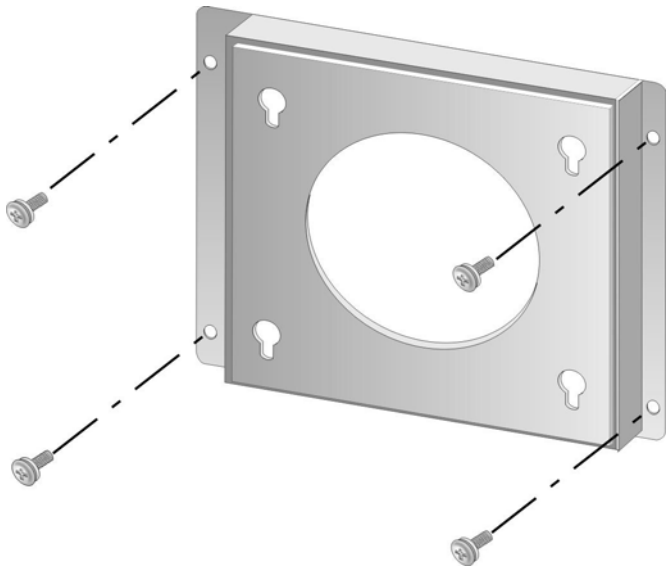


Figure 3-20: Wall-mounting Bracket

Step 6: Insert the four monitor mounting screws provided in the wall mounting kit into the four screw holes on the real panel of the monitor and tighten until the screw shank is secured against the rear panel (**Figure 3-21**).

Step 1: Align the mounting screws on the monitor rear panel with the mounting holes on the bracket.

Step 2: Carefully insert the screws through the holes and gently pull the monitor downwards until the monitor rests securely in the slotted holes (**Figure 3-21**). Ensure that all four of the mounting screws fit snuggly into their respective slotted holes.

NOTE:

In the diagram below the bracket is already installed on the wall.

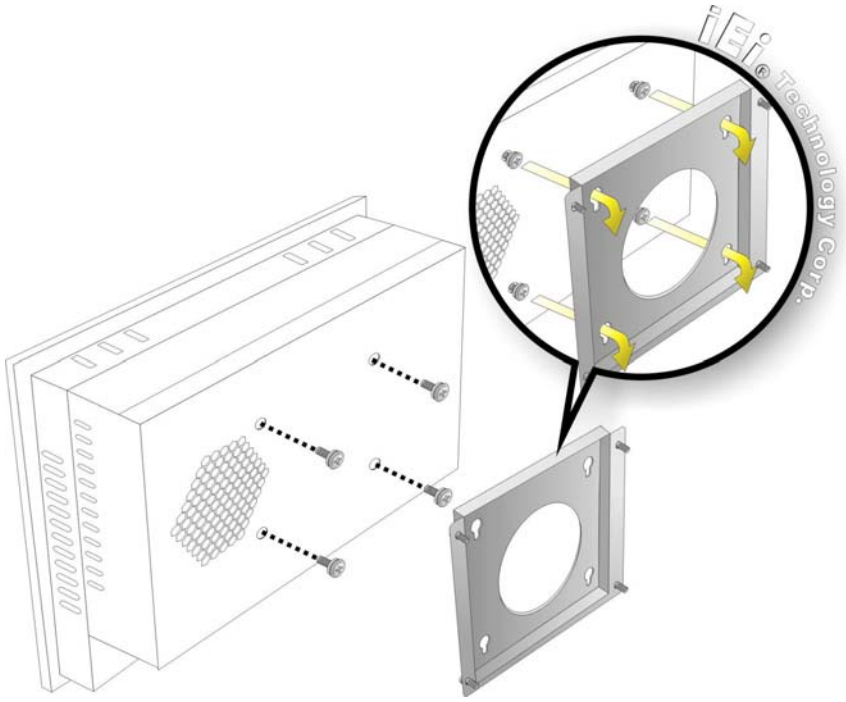


Figure 3-21: Mount the Chassis

Step 3: Secure the panel PC with the wall-mounting kit. To do this, stick the protective cushion to the wall-mounting kit first. Then, put the wall-mounting kit on the top panel of the panel PC. Carefully mark the location of the wall-mounting kit screw holes on the wall. Drill a pilot hole at the marked location on the wall. Secure the wall-mounting kit to the wall by inserting a retention screw into the pilot hole on the wall (**Figure 3-22**). This step is to avoid the panel PC being pushed apart from the wall-mounting bracket accidentally.

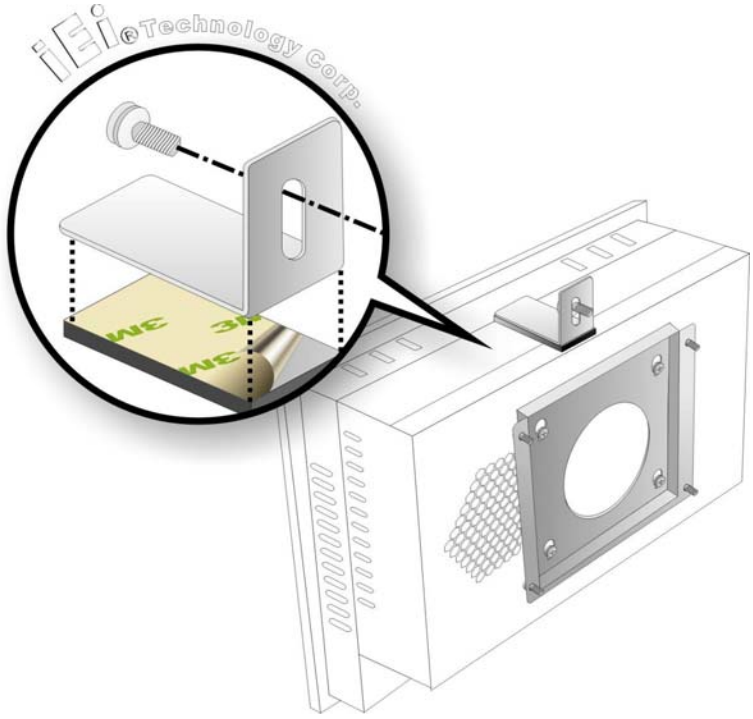


Figure 3-22: Secure the Chassis

3.9.2 Panel Mounting

3.9.2.1 PPC-3708/PPC-3710 Panel Mounting

To mount the PPC-3708/PPC-3710 flat panel PC into a panel, please follow the steps below.

Step 1: Select the position in the panel to mount the PPC-3708/PPC-3710.

Step 2: Cut out a section from the panel that corresponds to the dimensions of the PPC-3708/PPC-3710 flat panel PC chassis. The panel section that is cut out must be smaller than the size of the aluminum frame that surrounds the TFT LCD panel but just large enough for the chassis to fit through. Refer to **Figure 3-23** and **Figure 3-24** for the suggested cut out size.

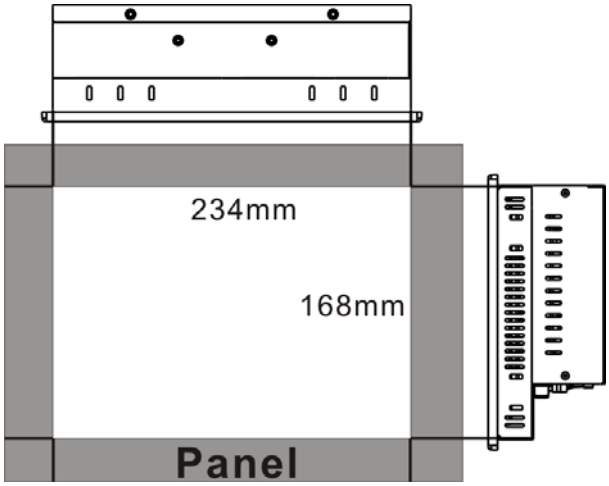


Figure 3-23: Suggested Panel Cut Out Size for PPC-3708

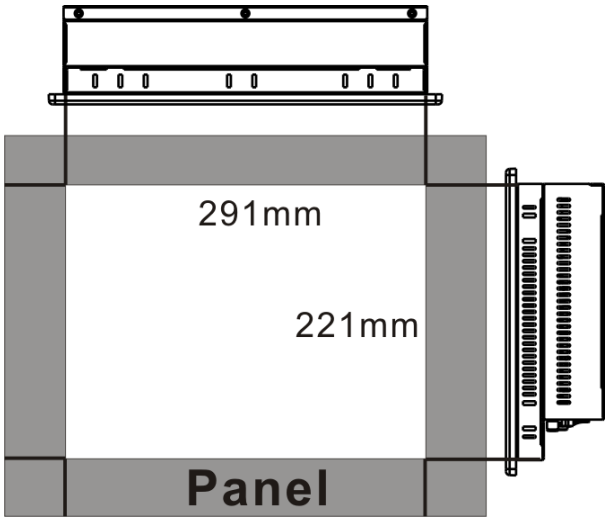


Figure 3-24: Suggested Panel Cut Out Size for PPC-3710

Step 3: Slide the PPC-3708/PPC-3710 flat panel computer through the previously cut hole. The chassis at the rear of the PPC-3708/PPC-3710 flat panel should slide easily through the hole. Only stop sliding the panel through the hole when the back of the front aluminum frame is flush against the panel.

Step 4: Insert the panel mounting clamps into the pre-formed holes along the edges of the chassis, behind the aluminum frame. There are a total of 8 panel mounting clamps for PPC-3708 and 10 clamps for PPC-3710.

Step 5: Tighten the screws that pass through the panel mounting clamps until the plastic

caps at the front of all the screws are firmly secured to the panel (**Figure 3-25**).

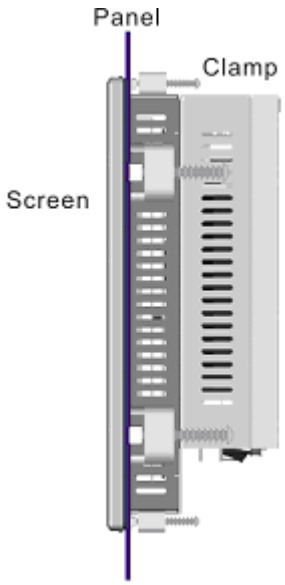


Figure 3-25: Tighten the Panel Mounting Clamp Screws (PPC-3708/PPC-3710)

3.9.2.2 PPC-3712 Panel Mounting

To mount the PPC-3712 flat panel PC into a panel, please follow the steps below.

Step 1: Install the panel mounting kit onto the PPC-3712 real panel (**Figure 3-26**).

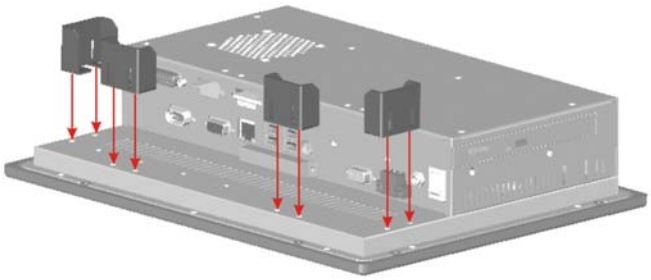


Figure 3-26: PPC-3712 Panel Mounting Kit

Step 2: Select the position in the panel to mount the PPC-3712.

Step 3: Cut out a section from the panel that corresponds to the dimensions of the

PPC-3712 flat panel PC chassis. The panel section that is cut out must be smaller than the size of the aluminum frame that surrounds the 12.1" TFT LCD panel but just large enough for the chassis to fit through (**Figure 3-27**).

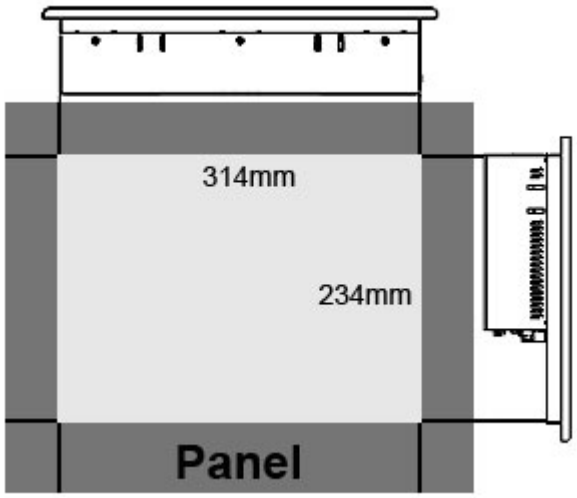


Figure 3-27: Suggested Panel Cut Out Size for PPC-3712

Step 4: Slide the PPC-3712 through the hole until the aluminum frame is flush against the panel.

Step 5: Insert the panel mounting clamps into the pre-formed holes along the edges of the chassis, behind the aluminum frame. There are a total of 8 panel mounting clamps.

Step 6: Tighten the screws that pass through the panel mounting clamps until the plastic caps at the front of all the screws are firmly secured to the panel (**Figure 3-28**).

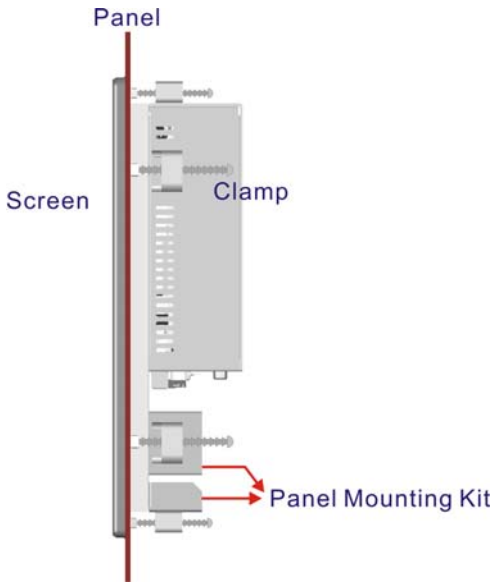


Figure 3-28: Tighten the Panel Mounting Clamp Screws (PPC-3712)

3.9.3 Arm Mounting

The flat panel PC is VESA (Video Electronics Standards Association) compliant and can be mounted on an arm with a 100mm interface pad. To mount the flat panel PC on an arm, please follow the steps below.

Step 1: The arm is a separately purchased item. Please correctly mount the arm onto the surface it uses as a base. To do this, refer to the installation documentation that came with the mounting arm.

NOTE:

When purchasing the arm please ensure that it is VESA compliant and that the arm has a 100mm interface pad. If the mounting arm is not VESA compliant it cannot be used to support the flat panel PC.

Step 2: Once the mounting arm has been firmly attached to the surface, lift the flat panel PC onto the interface pad of the mounting arm.

Step 3: Align the retention screw holes on the mounting arm interface with those in the

flat panel PC. The flat panel PC arm mount retention screw holes are shown in **Figure 3-29**.

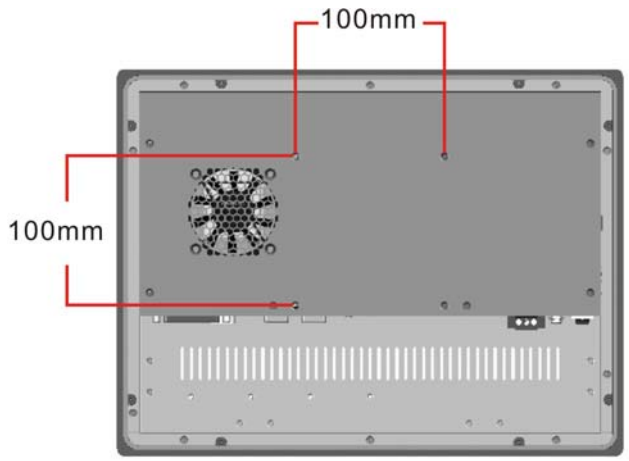


Figure 3-29: Arm Mounting Retention Screw Holes

Step 4: Secure the flat panel PC to the interface pad by inserting four retention screws through the bottom of the mounting arm interface pad and into the flat panel PC.

3.9.4 Cabinet and Rack Installation

The PPC-3708, PPC-3710 and PPC-3712 flat panel PC can be installed into a cabinet or rack. To do this, please follow the steps below.

3.9.4.1 PPC-3708 Cabinet and Rack Installation

Step 1: Slide the rear chassis of the PPC-3708 flat panel PC through the rack/cabinet bracket until the aluminum frame is flush against the front of the bracket (**Figure 3-30**).

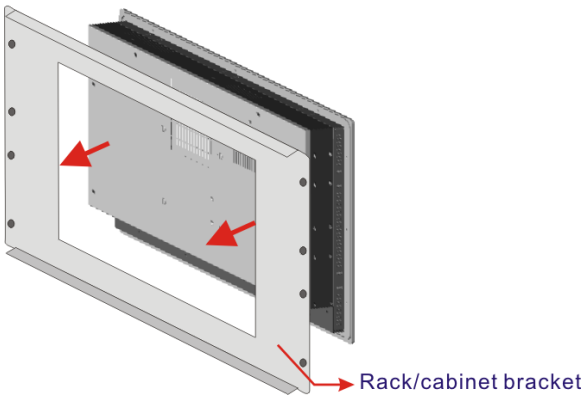


Figure 3-30: The Rack/Cabinet Bracket

Step 2: Insert the rack mounting clamps into the pre-formed holes along the edges of the PPC-3708, behind the metal frame. The required number of mounting clamps should be eight.

Step 3: Tighten the screws that pass through the rack mounting clamps until the plastic caps at the front of all the screws are firmly secured to the bracket (**Figure 3-31**).

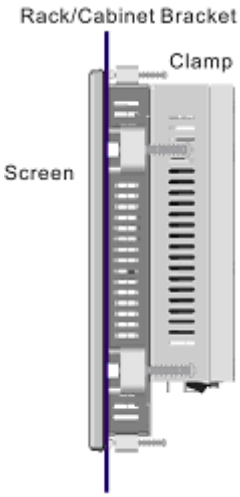


Figure 3-31: Secure the PPC-3708 Rack/Cabinet Bracket

Step 4: Slide the PPC-3708 flat panel PC with the attached rack/cabinet bracket into a rack or cabinet (**Figure 3-32**).

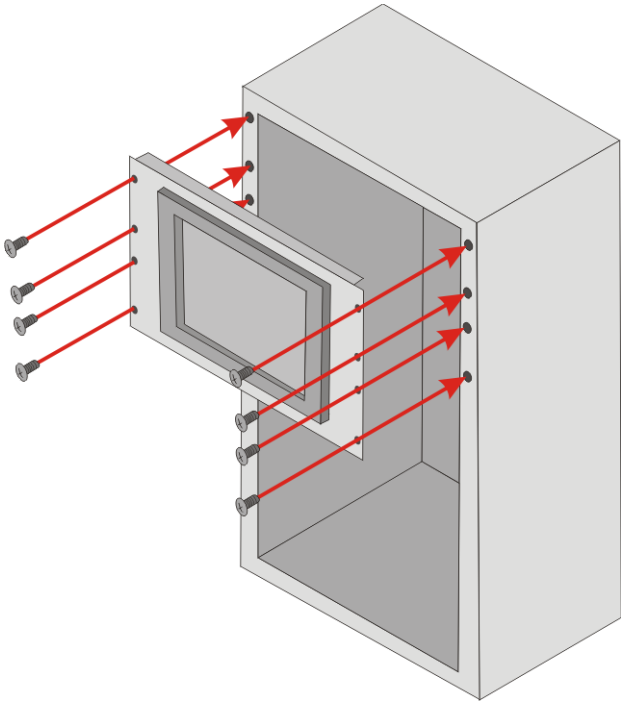


Figure 3-32: Install into a Rack/Cabinet

Step 5: Once the PPC-3708 flat panel PC with the attached rack/cabinet bracket has been properly inserted into the rack or cabinet, secure the front of the rack/cabinet bracket to the front of the rack or cabinet (**Figure 3-32**).

3.9.4.2 PPC-3710/PPC-3712 Cabinet and Rack Installation

Step 1: The back of the aluminum frame surrounding the PPC-3710/PPC-3712 TFT LCD screen has retention screw holes (PPC-3710 has 10 holes and PPC-3712 has 8 holes) for a cabinet/rack installation bracket.

NOTE:

When purchasing the cabinet/rack installation bracket make sure it is compatible with both the PPC-3710/PPC-3712 flat panel PC and the rack/cabinet into which the PPC-3710/PPC-3712 is installed.

Step 2: Slide the rear chassis of the PPC-3710/PPC-3712 flat panel PC through the

rack/cabinet bracket until the rear side of the LCD screen frame is flush against the front of the bracket.

Step 3: Make sure the retention screw holes at the rear of the LCD screen are aligned with the retention screw holes in the rack/cabinet bracket.

Step 4: Secure the rack/cabinet bracket to the PPC-3712 flat panel PC by inserting the retention screws (**Figure 3-33**).

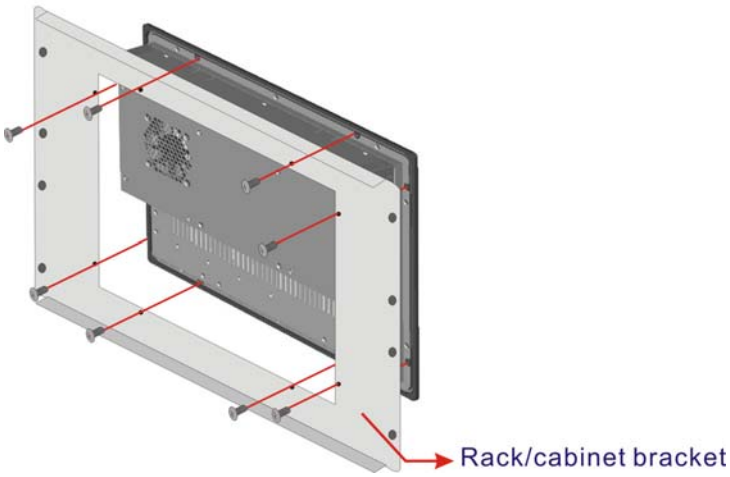


Figure 3-33: Secure the PPC-3710/PPC-3712 Rack/Cabinet Bracket

Step 5: Follow the **Step 4** and **Step 5** of the PPC-3708 Cabinet and Rack Installation procedures to complete the whole installation process.

3.10 Rear Panel Connectors

3.10.1 LCD Panel Connection

To connect the flat panel PC to a second monitor, a conventional CRT VGA monitor connector is located on the bottom panel. This panel is a 15-pin, female D-SUB connector.

NOTE:

To use the dual screen option, please configure this option in the **Intel® Extreme Graphics** configuration program. To do this, after Windows has

loaded, open the **Control Panel**, locate the **Intel® Extreme Graphics** icon, click on it. Once open, an option for **Multiple Display** is available. Select this option and select notebook as the primary device.

3.10.2 Ethernet Connection

The rear panel RJ-45 connector can be connected to an external LAN and provide internet connectivity to the flat panel PC.

3.10.3 USB Connection

The rear panel USB connectors provide easier and quicker access to external USB devices. The rear panel USB connector is a standard connector and can easily be connected to other USB devices.

3.10.4 Keyboard and Mouse Connection

Two PS/2 connectors on the bottom panel facilitate the connection of a mouse and a keyboard. To connect either device, plug the PS/2 connector at the end of the device (keyboard or mouse) cable into the PS/2 connector on the bottom panel.

3.11 System Maintenance

If the components of the flat panel PC fail, they must be replaced. Please contact the system reseller or vendor to purchase the replacement parts. Replacement instructions for the above listed components are described below.

NOTE:

A user cannot replace a motherboard. If the motherboard fails it must be shipped back to IEI to be replaced. Please contact the system vendor, reseller or an IEI sales person directly.

Chapter

4

AMI BIOS Setup

4.1 Introduction

A licensed copy of AMI BIOS is preprogrammed into the ROM BIOS. The BIOS setup program allows users to modify the basic system configuration. This chapter describes how to access the BIOS setup program and the configuration options that may be changed.

4.1.1 Starting Setup

The AMI BIOS is activated when the computer is turned on. The setup program can be activated in one of two ways.

1. Press the **DELETE** key as soon as the system is turned on or
2. Press the **DELETE** key when the "**Press Del to enter SETUP**" message appears on the screen.

If the message disappears before the **DELETE** key is pressed, restart the computer and try again.

4.1.2 Using Setup

Use the arrow keys to highlight items, press **ENTER** to select, use the PageUp and PageDown keys to change entries, press **F1** for help and press **ESC** to quit. Navigation keys are shown in.

Key	Function
Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item on the left hand side
Right arrow	Move to the item on the right hand side
Esc key	Main Menu – Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
"+" key	Increase the numeric value or make changes
"-" key	Decrease the numeric value or make changes

F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2 /F3 key	Change color from total 16 colors. F2 to select color forward.
F10 key	Save all the CMOS changes, only for Main Menu

Table 4-1: BIOS Navigation Keys

4.1.3 Getting Help

When **F1** is pressed a small help window describing the appropriate keys to use and the possible selections for the highlighted item appears. To exit the Help Window press **Esc** or the **F1** key again.

4.1.4 Unable to Reboot After Configuration Changes

If the computer cannot boot after changes to the system configuration is made, CMOS defaults. Use the jumper described in Chapter **Chapter 3**, **Section 3.5.**

4.1.5 BIOS Menu Bar

The **menu bar** on top of the BIOS screen has the following main items:

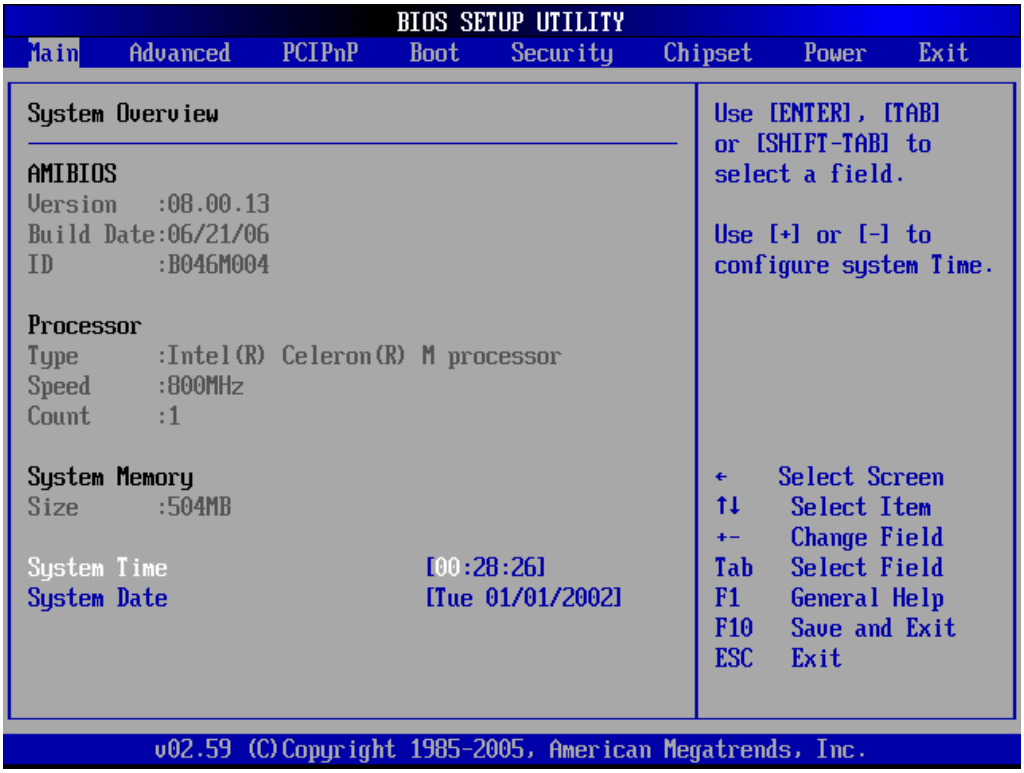
- **Main** Changes the basic system configuration.
- **Advanced** Changes the advanced system settings.
- **PCIPnP** Changes the advanced PCI/PnP Settings
- **Boot** Changes the system boot configuration.
- **Security** Sets User and Supervisor Passwords.
- **Chipset** Changes the chipset settings.
- **Power** Changes power management settings.
- **Exit** Selects exit options and loads default settings

The following sections completely describe the configuration options found in the menu items at the top of the BIOS screen and listed above.

4.2 Main

The **Main** BIOS menu (**BIOS Menu 1**) appears when the **BIOS Setup** program is entered.

The **Main** menu gives an overview of the basic system information.



BIOS Menu 1: Main

➔ System Overview

The **System Overview** lists a brief summary of different system components. The fields in **System Overview** cannot be changed. The items shown in the system overview include:

- **AMI BIOS**: Displays auto-detected BIOS information
  - **Version**: Current BIOS version
  - **Build Date**: Date the current BIOS version was made
  - **ID**: Installed BIOS ID
- **Processor**: Displays auto-detected CPU specifications
  - **Type**: Names the currently installed processor

- **Speed**: Lists the processor speed
- **Count**: The number of CPUs on the motherboard

- **System Memory**: Displays the auto-detected system memory.
  - **Size**: Lists memory size

The System Overview field also has two user configurable fields:

➔ **System Time [xx:xx:xx]**

Use the **System Time** option to set the system time. Manually enter the hours, minutes and seconds.

➔ **System Date [xx/xx/xx]**

Use the **System Date** option to set the system date. Manually enter the day, month and year.

4.3 Advanced

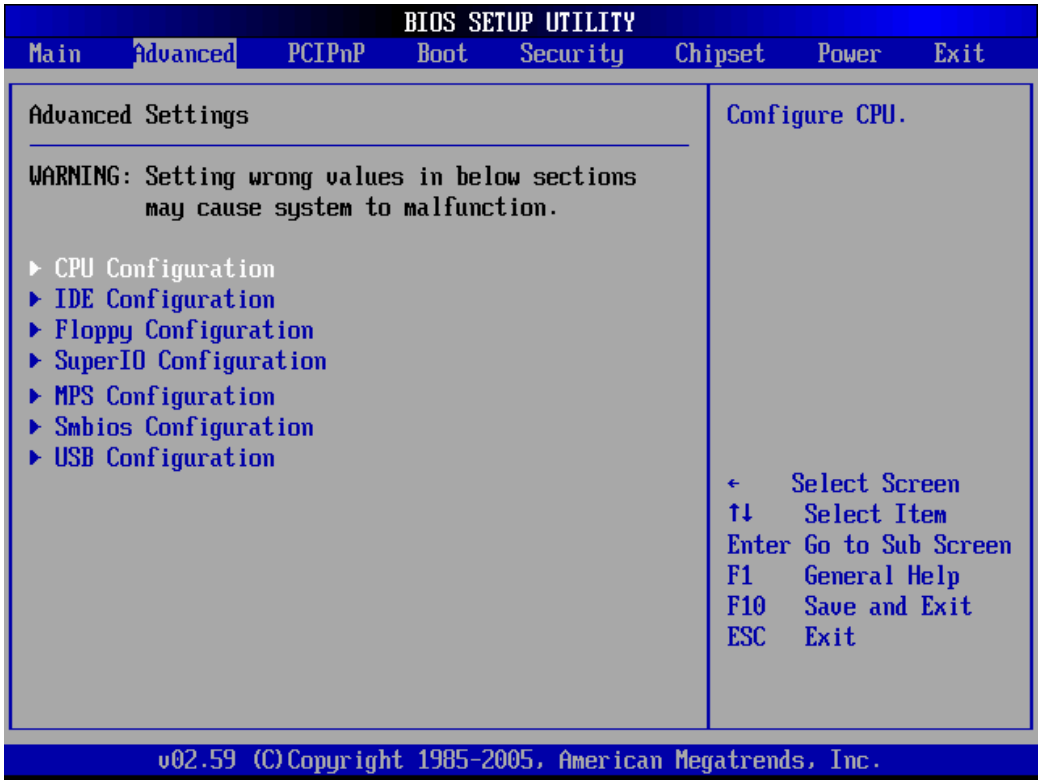
Use the **Advanced** menu (**BIOS Menu 2**) to configure the CPU and peripheral devices through the following sub-menus:

WARNING!

Setting the wrong values in the sections below may cause the system to malfunction. Make sure that the settings made are compatible with the hardware.

- CPU Configuration (see Section 4.3.1)
- IDE Configuration (see Section 4.3.2)
- Floppy Configuration (see Section 4.3.3)
- SuperIO Configuration (see Section 4.3.4)
- Hardware Health Configuration (see Section 4.3.5)
- MPS Configuration (see Section 4.3.6)
- Smbios Configuration (see Section 4.3.7)

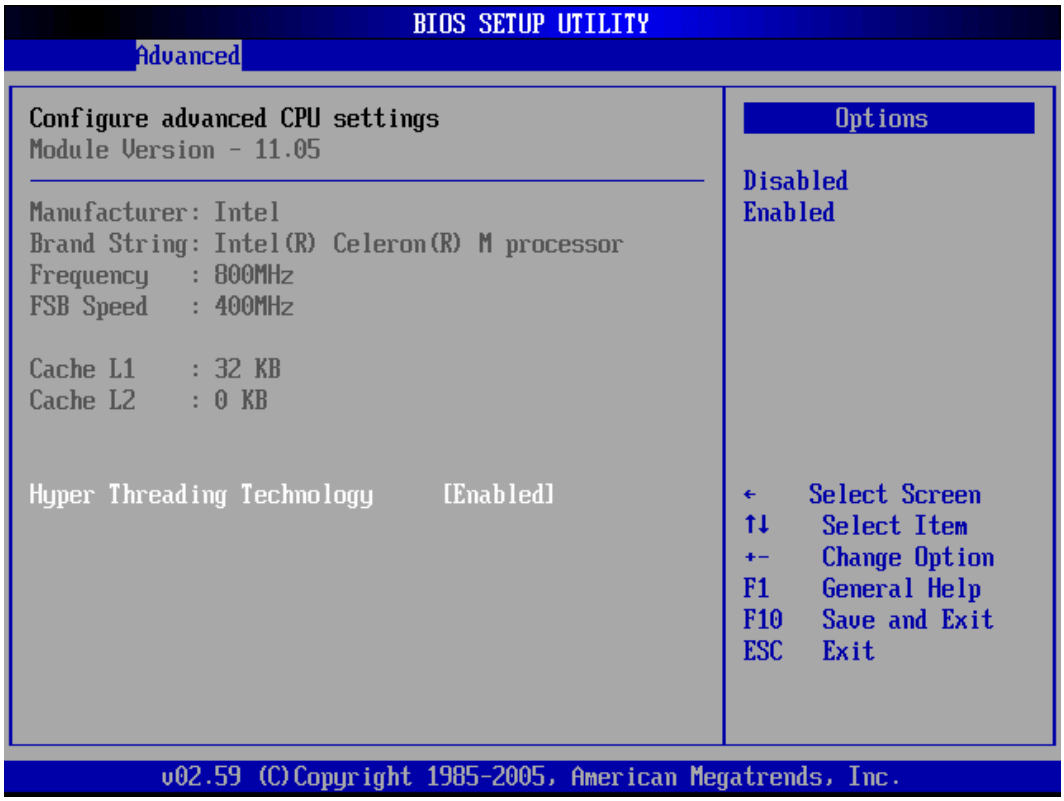
- USB Configuration (see Section 4.3.8)



BIOS Menu 2: Advanced

4.3.1 CPU Configuration

Use the **CPU Configuration** menu (**BIOS Menu 3**) to view detailed CPU specifications and configure the CPU.



BIOS Menu 3: CPU Configuration

The CPU Configuration menu (**BIOS Menu 3**) lists the following CPU details:

- **Manufacturer**: Lists the name of the CPU manufacturer
- **Brand String**: Lists the brand name of the CPU being used
- **Frequency:** Lists the CPU processing speed
- **FSB Speed**: Lists the FSB speed
- **Cache L1**: Lists the CPU L1 cache size
- **Cache L2**: Lists the CPU L2 cache size

The following **CPU Configuration** menu item can be configured.

- Hyper Threading Technology

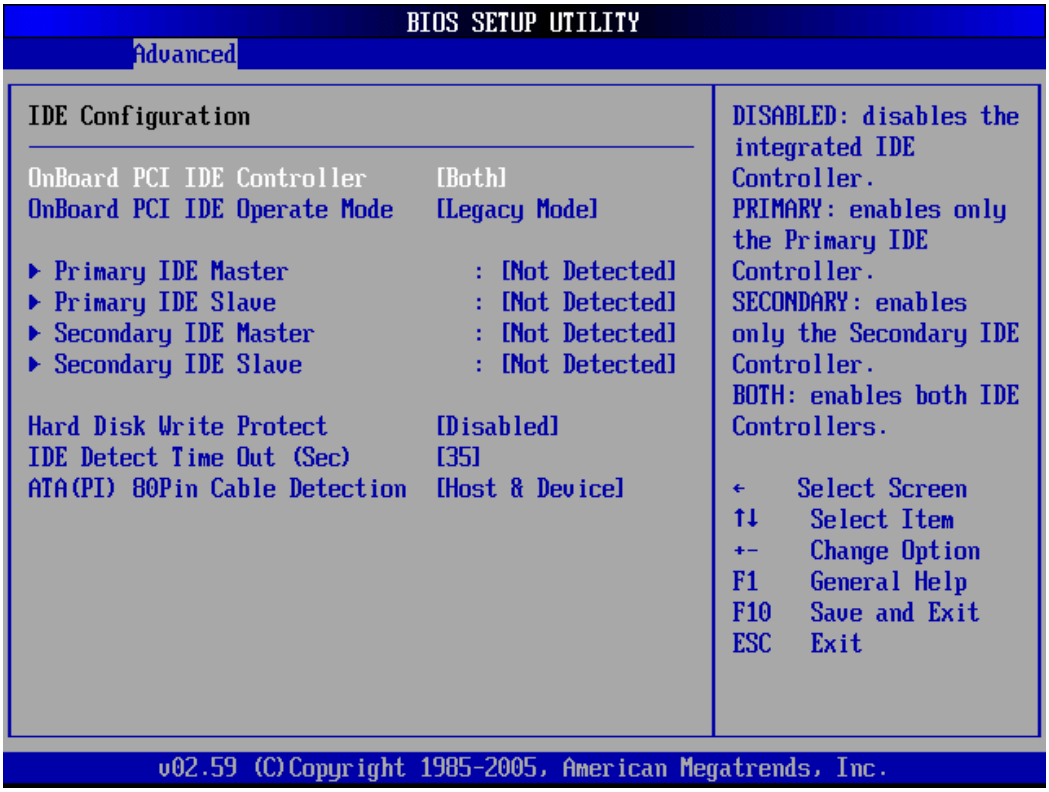
➔ **Hyper Threading Technology [Enabled]**

➔ **Disabled** Disables the use of hyper threading technology

➔ **Enabled** **DEFAULT** Enables the use of hyper threading technology

4.3.2 IDE Configuration

Use the **IDE Configuration** menu (**BIOS Menu 4**) to change and/or set the configuration of the IDE devices installed in the system.


BIOS SETUP UTILITY
Advanced
IDE Configuration
OnBoard PCI IDE Controller [Both]
OnBoard PCI IDE Operate Mode [Legacy Mode]
▸ Primary IDE Master : [Not Detected]
▸ Primary IDE Slave : [Not Detected]
▸ Secondary IDE Master : [Not Detected]
▸ Secondary IDE Slave : [Not Detected]
Hard Disk Write Protect [Disabled]
IDE Detect Time Out (Sec) [35]
ATA(PI) 80Pin Cable Detection [Host & Device]
DISABLED: disables the integrated IDE Controller.
PRIMARY: enables only the Primary IDE Controller.
SECONDARY: enables only the Secondary IDE Controller.
BOTH: enables both IDE Controllers.
← Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
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BIOS Menu 4: IDE Configuration

➔ **OnBoard PCI IDE Controller [Both]**

Use the **OnBoard PCI IDE Controller** BIOS option to specify the IDE channels used by the onboard PCI IDE controller. The following configuration options are available.

➔ **Disabled** Prevents the system from using the onboard IDE controller

➔ **Primary** Only allows the system to detect the Primary IDE

channel, including both the Primary Master and the Primary Slave

➔ **Secondary** Only allows the system to detect the Secondary IDE channel, including both the Secondary Master and Secondary Slave

➔ **Both** **DEFAULT** Allows the system to detect both the Primary and Secondary IDE channels including the Primary Master, Primary Slave, Secondary Master and Secondary Slave.

➔ **Onboard PCI IDE Mode [Legacy Mode]**

Use the **Onboard PCI IDE Mode** BIOS option to set the running mode for the PCI IDE.

➔ **Legacy Mode** **DEFAULT** The PCI IDE mode is the same as the IDE mode

➔ **Native Mode** The PCI IDE mode is the native mode

➔ **Hard Disk Write Protect [Disabled]**

The **Hard Disk Write Protect** BIOS option protects the hard disks from being overwritten. This menu item is only effective if the device is accessed through the BIOS.

➔ **Disabled** **DEFAULT** Allows hard disks to be overwritten

➔ **Enabled** Prevents hard disks from being overwritten

➔ **IDE Detect Time Out (Sec) [35]**

The **IDE Detect Time Out (Sec)** BIOS option specifies the maximum time (in seconds) the AMI BIOS will search for IDE devices. This allows fine-tunes the settings to allow for faster boot times. The following configuration options are available.

- 0 seconds

- 5 seconds
- 10 seconds
- 15 seconds
- 20 seconds
- 25 seconds
- 30 seconds
- 35 seconds (Default)

The best setting to use if the onboard IDE controllers are set to a specific IDE disk drive in the AMI BIOS is “0 seconds” and a large majority of ultra ATA hard disk drives can be detected well within “35 seconds” (the default setting).

➔ **ATA (PI) 80Pin Cable Detection [Host & Device]**

When an Ultra ATA/66, an Ultra ATA/100 or an Ultra ATA/133 IDE hard disk drive is used, an 80-conductor ATA cable must be used. The 80-conductor ATA cable is plug compatible with the standard 40-conductor ATA cable. The system must detect the presence of correct cable so that the AMIBIOS can instruct the drive to run at the correct speed for the cable type detected.

The **ATA (PI) 80Pin Cable Detection** BIOS option determines how the IDE cable will be detected.

➔ **Host & Device** **DEFAULT** Both the motherboard onboard IDE controller and IDE disk drive are used to detect the type of IDE cable used.

➔ **Host** The motherboard onboard IDE controller detects the type of IDE cable used.

➔ **Device** The IDE disk drive to detects the type of IDE cable used.

➔ **IDE Master and IDE Slave**

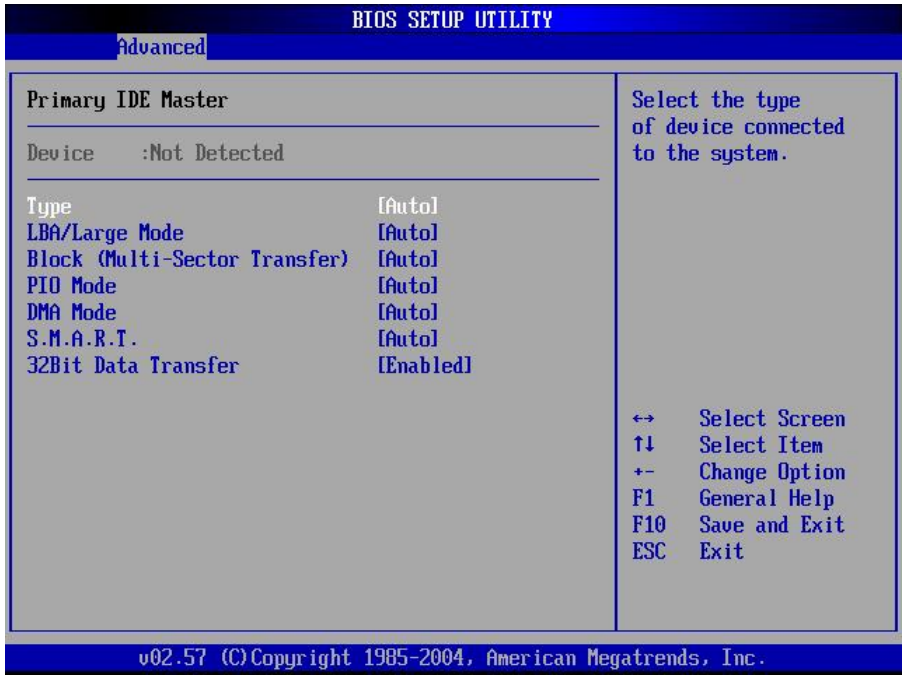
When entering setup, BIOS auto detects the presence of IDE devices. BIOS displays the status of the auto detected IDE devices. The following IDE devices are detected and are shown in the **IDE Configuration** menu:

- Primary IDE Master
- Primary IDE Slave
- Secondary IDE Master
- Secondary IDE Slave

The **IDE Configuration** menu (**BIOS Menu 4**) allows changes to the configurations for the IDE devices installed in the system. If an IDE device is detected, and one of the above listed four BIOS configuration options are selected, the IDE configuration options shown in **Section 4.3.2.1** appear.

4.3.2.1 IDE Master, IDE Slave

Use the **IDE Master** and **IDE Slave** configuration menu to view both primary and secondary IDE device details and configure the IDE devices connected to the system.



BIOS Menu 5: IDE Master and IDE Slave Configuration

➔ **Auto-Detected Drive Parameters**

The “grayed-out” items in the left frame are IDE disk drive parameters automatically detected from the firmware of the selected IDE disk drive. The drive parameters are listed as follows:

- **Type**: Lists the device type (e.g. hard disk, CD-ROM etc.)
- **LBA Mode**: Indicates whether the LBA (Logical Block Addressing) is a method of addressing data on a disk drive is supported or not.
- **Block Mode**: Block mode boosts IDE drive performance by increasing the amount of data transferred. Only 512 bytes of data can be transferred per interrupt if block mode is not used. Block mode allows transfers of up to 64 KB per interrupt.
- **PIO Mode**: Indicates the PIO mode of the installed device.
- **DMA Mode**: Indicates the highest Asynchronous DMA Mode that is supported.
- **S.M.A.R.T.**: Indicates whether or not the Self-Monitoring Analysis and Reporting Technology protocol is supported.

➔ **Type [Auto]**

Use the **Type** BIOS option select the type of device the AMIBIOS attempts to boot from after the Power-On Self-Test (POST) is complete.

➔ **Not Installed**		BIOS is prevented from searching for an IDE disk drive on the specified channel.
➔ **Auto**	**DEFAULT**	The BIOS auto detects the IDE disk drive type attached to the specified channel. This setting should be used if an IDE hard disk drive is attached to the specified channel.
➔ **CD/DVD**		The CD/DVD option specifies that an IDE CD-ROM drive is attached to the specified IDE channel. The BIOS does not attempt to search for other types of

IDE disk drives on the specified channel.

➔ **ARMD** This option specifies an ATAPI Removable Media Device. These include, but are not limited to:

- ➔ **ZIP**
- ➔ **LS-120**

➔ **LBA/Large Mode [Auto]**

Use the **LBA/Large Mode** option to disable or enable BIOS to auto detects LBA (Logical Block Addressing). LBA is a method of addressing data on a disk drive. In LBA mode, the maximum drive capacity is 137 GB.

➔ **Disabled** BIOS is prevented from using the LBA mode control on the specified channel.

➔ **Auto** **DEFAULT** BIOS auto detects the LBA mode control on the specified channel.

➔ **Block (Multi Sector Transfer) [Auto]**

Use the **Block (Multi Sector Transfer)** to disable or enable BIOS to auto detect if the device supports multi-sector transfers.

➔ **Disabled** BIOS is prevented from using Multi-Sector Transfer on the specified channel. The data to and from the device occurs one sector at a time.

➔ **Auto** **DEFAULT** BIOS auto detects Multi-Sector Transfer support on the drive on the specified channel. If supported the data transfer to and from the device occurs multiple sectors at a time.

➔ **PIO Mode [Auto]**

Use the **PIO Mode** option to select the IDE PIO (Programmable I/O) mode program timing cycles between the IDE drive and the programmable IDE controller. As the PIO mode increases, the cycle time decreases.

➔ **Auto**	**DEFAULT**	BIOS auto detects the PIO mode. Use this value if the IDE disk drive support cannot be determined.
➔ **0**		PIO mode 0 selected with a maximum transfer rate of 3.3MBps
➔ **1**		PIO mode 1 selected with a maximum transfer rate of 5.2MBps
➔ **2**		PIO mode 2 selected with a maximum transfer rate of 8.3MBps
➔ **3**		PIO mode 3 selected with a maximum transfer rate of 11.1MBps
➔ **4**		PIO mode 4 selected with a maximum transfer rate of 16.6MBps (This setting generally works with all hard disk drives manufactured after 1999. For other disk drives, such as IDE CD-ROM drives, check the specifications of the drive.)

➔ **DMA Mode [Auto]**

Use the **DMA Mode** BIOS selection to adjust the DMA mode options.

➔ **Auto**	**DEFAULT**	BIOS auto detects the DMA mode. Use this value if the IDE disk drive support cannot be determined.

➔ **S.M.A.R.T [Auto]**

Use the **S.M.A.R.T** option to auto-detect, disable or enable Self-Monitoring Analysis and Reporting Technology (SMART) on the drive on the specified channel. **S.M.A.R.T** predicts impending drive failures. The **S.M.A.R.T** BIOS option enables or disables this function.

➔ **Auto**	**DEFAULT**	BIOS auto detects HDD SMART support.

➔ **Disabled** Prevents BIOS from using the HDD SMART feature.

➔ **Enabled** Allows BIOS to use the HDD SMART feature

➔ **32Bit Data Transfer [Disabled]**

Use the **32Bit Data Transfer** BIOS option to enables or disable 32-bit data transfers.

➔ **Disabled** **DEFAULT** Prevents the BIOS from using 32-bit data transfers.

➔ **Enabled** Allows BIOS to use 32-bit data transfers on supported hard disk drives.

4.3.3 Floppy Configuration

Use the **Floppy Configuration** menu (**BIOS Menu 6**) to set or change the configurations for floppy disk drives.

BIOS Menu 6: Floppy Configuration

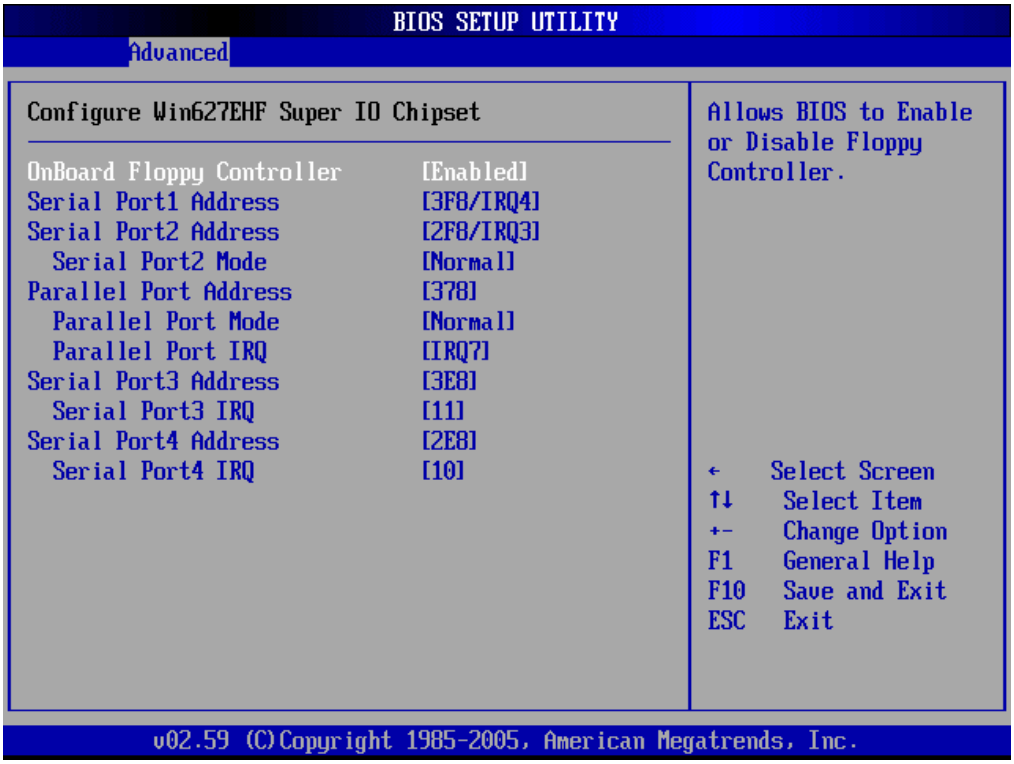
➔ **Floppy A [Disabled]**

The **Floppy A** configuration option determines the types of the floppy drive installed in the system. The following configuration options are available.

- Disabled (default)
- 360 KB 5¼”
- 1.2 MB 5¼”
- 720 KB 3 ½”
- 1.44 MB 3½”
- 2.88 MB 3½”

4.3.4 Super IO Configuration

Use the **Super IO Configuration** menu (**BIOS Menu 7**) to set or change the configurations for the FDD controllers, parallel ports and serial ports.



BIOS Menu 7: Super IO Configuration

➔ **On Board Floppy Controller [Enabled]**

➔ **Disabled** Allows BIOS to disable the floppy controller

➔ **Enabled** **DEFAULT** Allows BIOS to enable the floppy controller

➔ **Serial Port1 Address [3F8/IRQ4]**

Use the **Serial Port1 Address** option to select the Serial Port 1 base address.

➔ **Disabled** No base address is assigned to Serial Port 1

➔ **3F8/IRQ4** **DEFAULT** Serial Port 1 I/O port address is 3F8 and the interrupt address is IRQ4

➔ **3E8/IRQ4** Serial Port 1 I/O port address is 3E8 and the interrupt address is IRQ4

➔ **2E8/IRQ3** Serial Port 1 I/O port address is 2E8 and the interrupt address is IRQ3

➔ **Serial Port2 Address [2F8/IRQ3]**

Use the **Serial Port2 Address** option to select the Serial Port 2 base address.

➔ **Disabled** No base address is assigned to Serial Port 2

➔ **2F8/IRQ3** **DEFAULT** Serial Port 2 I/O port address is 3F8 and the interrupt address is IRQ3

➔ **3E8/IRQ4** Serial Port 2 I/O port address is 3E8 and the interrupt address is IRQ4

➔ **2E8/IRQ3** Serial Port 2 I/O port address is 2E8 and the interrupt address is IRQ3

➔ **Serial Port2 Mode [Normal]**

Use the **Serial Port2 Mode** option to select the Serial Port2 operational mode.

- **Normal** DEFAULT Serial Port 2 mode is normal
- **IrDA** Serial Port 2 mode is IrDA
- **ASK IR** Serial Port 2 mode is ASK IR

Parallel Port Address [378]

Use the **Parallel Port Address** option to select the parallel port base address.

- **Disabled** No base address is assigned to the Parallel Port
- **378** DEFAULT Parallel Port I/O port address is 378
- **278** Parallel Port I/O port address is 278
- **3BC** Parallel Port I/O port address is 3BC

Parallel Port Mode [Normal]

Use the **Parallel Port Mode** option to select the mode the parallel port operates in.

- **Normal** DEFAULT The normal parallel port mode is the standard mode for parallel port operation.
- **Bi-directional** Parallel port outputs are 8-bits long. Inputs are accomplished by reading 4 of the 8 bits on the status register.
- **ECP** The parallel port operates in the extended capabilities port (ECP) mode. The ECP mode supports bi-directional communication between the system and the parallel port device and the transmission rates between the two are much faster than the SPP mode.
- **EPP** The parallel port operates in the enhanced parallel

port mode (EPP). The EPP mode supports bi-directional communication between the system and the parallel port device and the transmission rates between the two are much faster than the Normal mode.

➔ **ECP & EPP** The parallel port operates in the extended capabilities port (ECP) mode. The ECP mode supports bi-directional communication between the system and the parallel port device and the transmission rates between the two are much faster than the Normal mode

The parallel port is also be compatible with EPP devices described above

➔ **Parallel Port IRQ [IRQ7]**

Use the **Parallel Port IRQ** selection to set the parallel port interrupt address.

➔ **IRQ5** IRQ5 is assigned as the parallel port interrupt address

➔ **IRQ7** **DEFAULT** IRQ7 is assigned as the parallel port interrupt address

➔ **Serial Port3 Address [3E8]**

Use the **Serial Port3 Address** option to select the base addresses for serial port 3

➔ **Disabled** No base address is assigned to serial port 3

➔ **3E8** **DEFAULT** Serial port 3 I/O port address is 3E8

➔ **2F8** Serial port 3 I/O port address is 2F8

➔ **3E8** Serial port 3 I/O port address is 3E8

- ➔ **2E8** Serial port 3 I/O port address is 2E8
- ➔ **2F0** Serial port 3 I/O port address is 2F0
- ➔ **2E0** Serial port 3 I/O port address is 2E0

➔ **Serial Port3 IRQ [11]**

Use the **Serial Port3 IRQ** option to select the interrupt address for serial port 3.

- ➔ **4** Serial port 3 IRQ address is 4
- ➔ **9** Serial port 3 IRQ address is 9
- ➔ **10** Serial port 3 IRQ address is 10
- ➔ **11** **DEFAULT** Serial port 3 IRQ address is 11

➔ **Serial Port4 Address [2E8]**

Use the **Serial Port4 IRQ** option to select the interrupt address for serial port 4.

- ➔ **Disabled** No base address is assigned to serial port 3
- ➔ **3F8** Serial port 4 I/O port address is 3F8
- ➔ **2F8** Serial port 4 I/O port address is 2F8
- ➔ **3E8** Serial port 4 I/O port address is 3E8
- ➔ **2E8** **DEFAULT** Serial port 4 I/O port address is 2E8
- ➔ **2F0** Serial port 4 I/O port address is 2F0
- ➔ **2E0** Serial port 4 I/O port address is 2E0

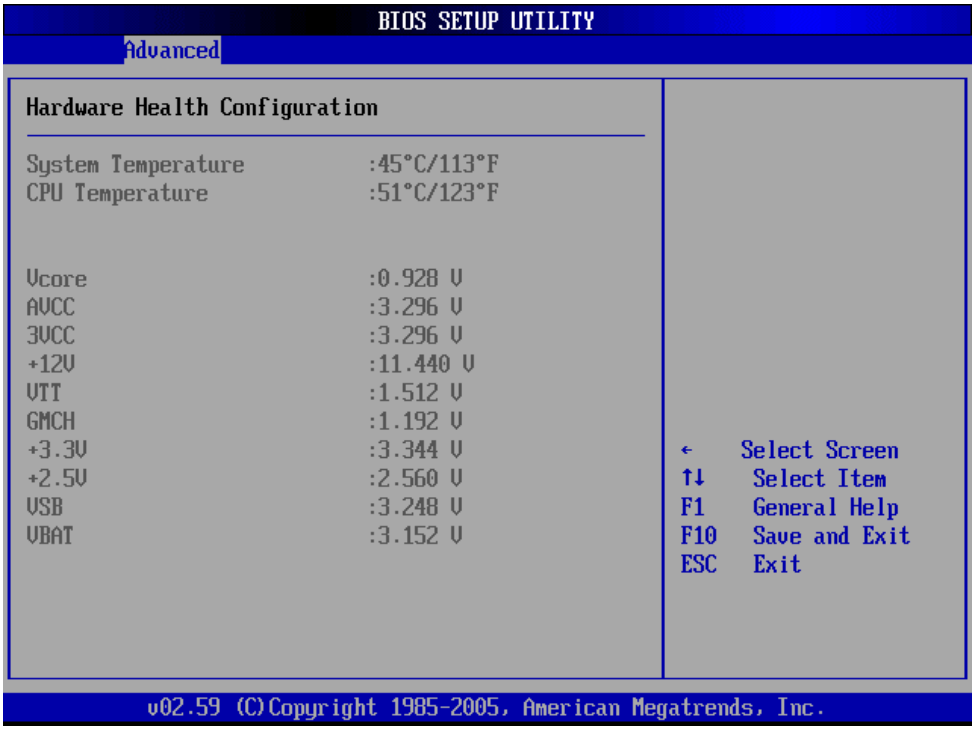
➔ **Serial Port4 IRQ [10]**

Use the **Serial Port4 IRQ** option to select the interrupt address for serial port 4.

➔ **3**		Serial port 4 IRQ address is 3
➔ **9**		Serial port 4 IRQ address is 9
➔ **10**	**DEFAULT**	Serial port 4 IRQ address is 10
➔ **11**		Serial port 4 IRQ address is 11

4.3.5 Hardware Health Configuration

The **Hardware Health Configuration** menu (**BIOS Menu 8**) shows the operating temperature, fan speeds and system voltages.



BIOS Menu 8: Hardware Health Configuration

The following system parameters and values are shown. The system parameters that are monitored are:

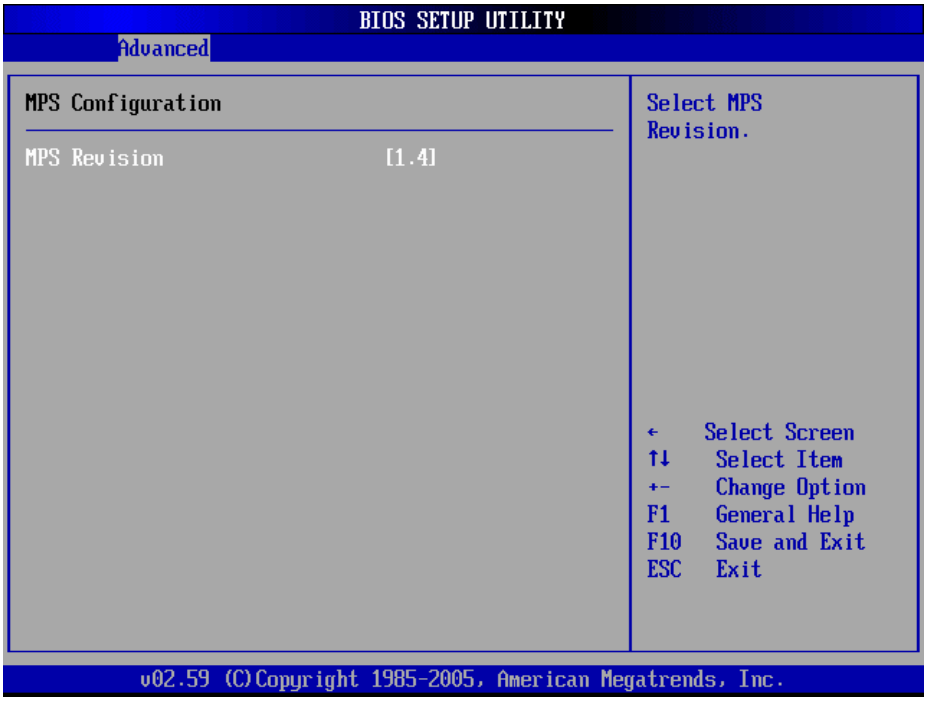
- **System Temperatures**: The following system temperatures are monitored
  - System Temperature

- CPU Temperature

- **Voltages**: The following system voltages are monitored
  - Vcore
  - AVCC
  - 3VCC
  - +12V
  - VTT
  - GMCH
  - +3.3V
  - +2.5V
  - VSB
  - VBAT

4.3.6 MPS Configuration

Use the **MPS Configuration** menu (**BIOS Menu 9)** to select `he multi-processor table.



BIOS Menu 9: MPS Configuration

➔ **MPS Revision [1.4]**

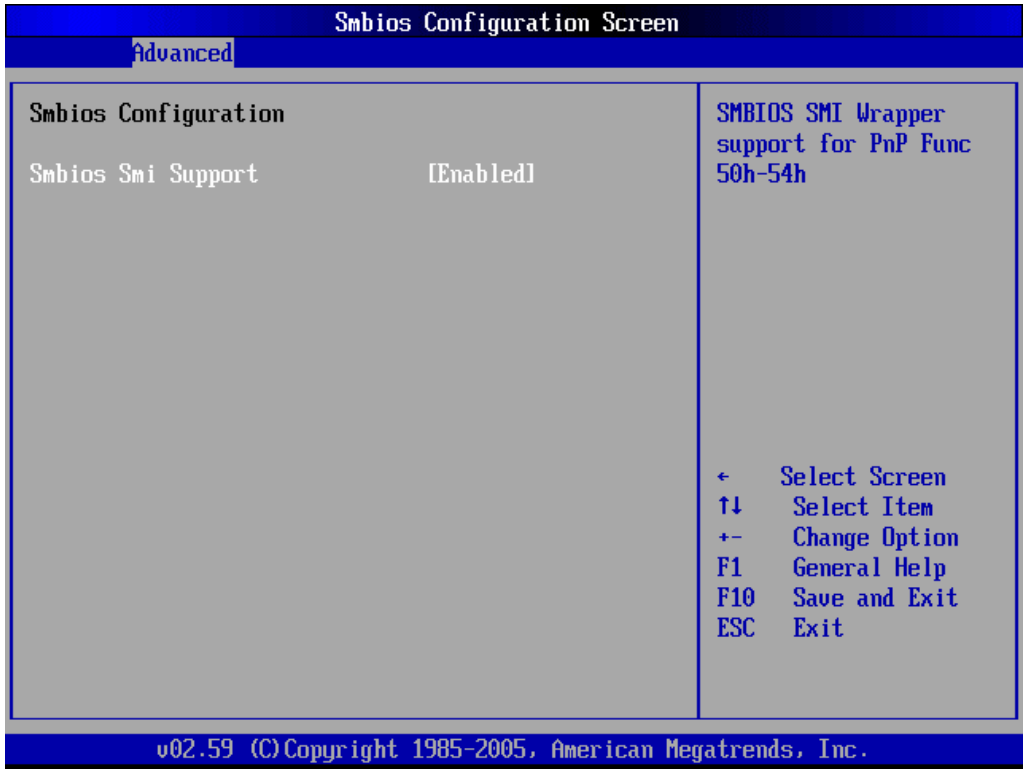
Use the **Multiprocessor Specification (MPS) for OS** option to specify the MPS version to be used.

➔ **1.1** MPS version 1.1 is used

➔ **1.4 DEFAULT** MPS version 1.4 is used

4.3.7 Smbios Configuration

Use the **Smbios Configuration** menu (**BIOS Menu 10**) to configure SMBIOS parameters.



BIOS Menu 10: Smbios Configuration

➔ **Smbios Smi Support [Enabled]**

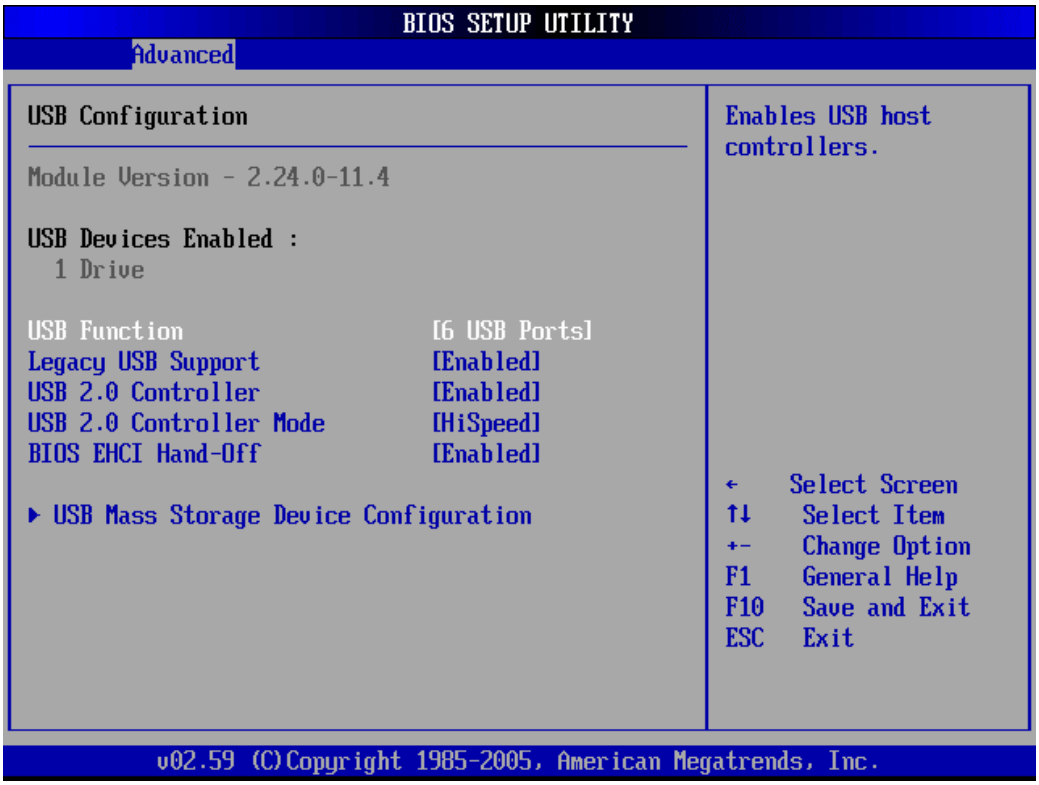
Use the **Smbios Smi Support** to enable the system to support the SMBIOS SMI wrapper for the PnP function 50h – 54h.

➔ **Disabled** SMBIOS SMI wrapper for the PnP function 50h – 54h not supported

➔ **Enabled** **DEFAULT** SMBIOS SMI wrapper for the PnP function 50h – 54h supported

4.3.8 USB Configuration

Use the **USB Configuration** menu (**BIOS Menu 11**) to read USB configuration information and configure the USB settings.



BIOS Menu 11: USB Configuration

➔ **USB Configuration**

The **USB Configuration** field shows the system USB configuration. The items listed are:

- Module Version: 2.24.0-11.4

➔ **USB Devices Enabled**

The **USB Devices Enabled** field lists the USB devices that are enabled on the system

➔ **USB Function [6 USB Ports]**

Use the **USB Function** BIOS option to enable USB host controllers.

➔	**Disabled**		USB function support disabled
➔	**2 USB Ports**		The USB controller activates 2 USB ports
➔	**4 USB Ports**		The USB controller activates 4 USB ports
➔	**6 USB Ports**	**DEFAULT**	The USB controller activates 6 USB ports

➔ **Legacy USB Support [Enabled]**

Use the **Legacy USB Support** BIOS option to enable USB mouse and USB keyboard support.

Normally if this option is not enabled, any attached USB mouse or USB keyboard does not become available until a USB compatible operating system is fully booted with all USB drivers loaded. When this option is enabled, any attached USB mouse or USB keyboard can control the system even when there is no USB driver loaded onto the system.

➔	**Disabled**		Legacy USB support disabled
➔	**Enabled**	**DEFAULT**	Legacy USB support enabled
➔	**Auto**		The Legacy USB support is automatically detected and enabled.

➔ **USB 2.0 Controller [Enabled]**

Use the **USB 2.0 Controller** BIOS option to enable or disable the USB 2.0 controller

➔	**Enabled**	**DEFAULT**	USB 2.0 controller enabled

➔ **Disabled** USB 2.0 controller disabled

➔ **USB2.0 Controller Mode [HiSpeed]**

Use the **USB2.0 Controller Mode** option to set the speed of the USB2.0 controller.

➔ **FullSpeed** The controller is capable of operating at 12Mb/s

➔ **HiSpeed** **DEFAULT** The controller is capable of operating at 480Mb/s

➔ **BIOS EHCI Handoff [Enable]**

Use the **BIOS EHCI Handoff** option for systems running OSes that do not have EHCI hand-off support. The EHCI ownership change is managed by the EHCI driver.

➔ **Disabled** Systems with OSes that do not support EHCI can use the EHCI handoff functionality.

➔ **Enabled** **DEFAULT** Systems with OSes that do not support EHCI cannot use the EHCI handoff functionality.

➔ **USB Mass Storage Device Configuration**

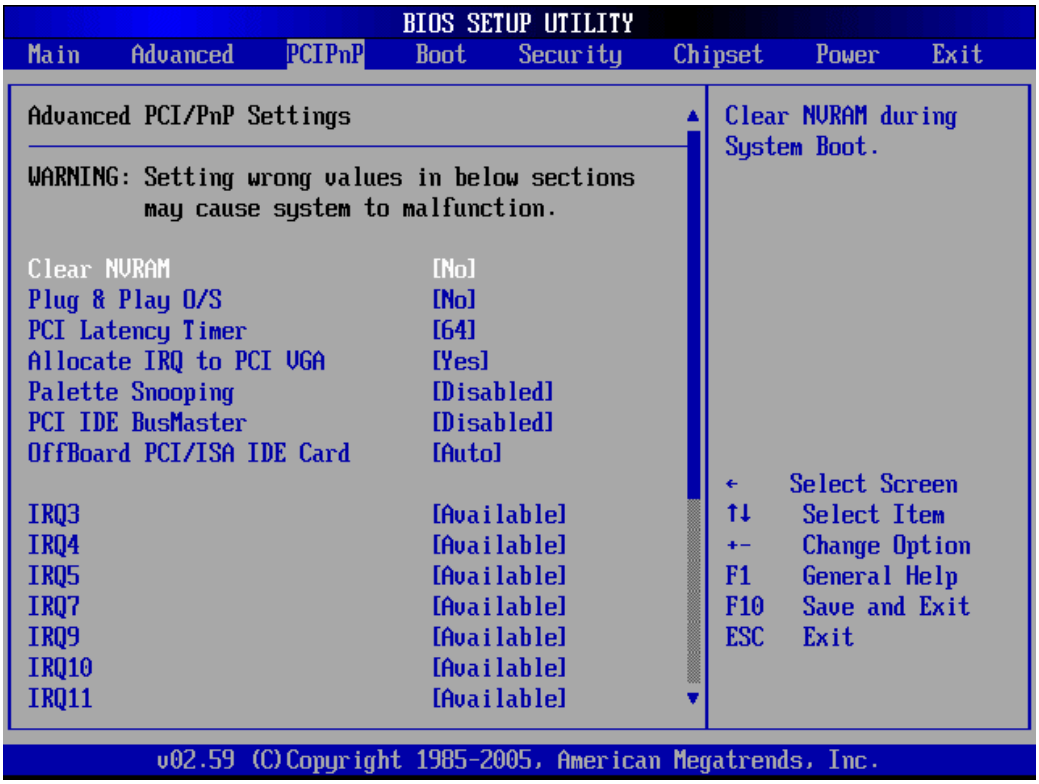
The **USB Mass Storage Device Configuration** field appears if a USB drive is connected to one of the USB ports or connectors. If this option is selected a menu appears.

4.4 PCI/PnP

Use the **PCI/PnP** menu (**BIOS Menu 12**) to configure advanced PCI and PnP settings.

WARNING!

Setting wrong values for the BIOS selections in the PCIPnP BIOS menu may cause the system to malfunction.



BIOS Menu 12: PCI/PnP Configuration

➔ **Clear NVRAM [No]**

Use the **Clear NVRAM** option to specify if the NVRAM (Non-Volatile RAM) is cleared when the power is turned off.

➔ **No**	**DEFAULT**	System does not clear NVRAM during system boot
➔ **Yes**		System clears NVRAM during system boot

➔ **Plug & Play O/S [No]**

Use the **Plug & Play O/S** BIOS option to specify whether system plug and play devices are configured by the operating system or the BIOS.

➔ **No** **DEFAULT** If the operating system does not meet the Plug and Play specifications, this option allows the BIOS to configure all the devices in the system.

➔ **Yes** This setting allows the operating system to change the interrupt, I/O, and DMA settings. Set this option if the system is running Plug and Play aware operating systems.

➔ **PCI Latency Timer [64]**

Use the **PCI Latency Timer** option to specify the PCI latency time. The latency time is measured in units of PCI clock cycles for the PCI device latency timer register. Configuration options are:

- 32
- 64 (Default)
- 96
- 128
- 160
- 192
- 224
- 248

➔ **Allocate IRQ to PCI VGA [Yes]**

Use the **Allocate IRQ to PCI VGA** option to restrict the system from giving the VGA adapter card an interrupt address.

➔ **Yes** **DEFAULT** Assigns an IRQ to a PCI VGA card if card requests IRQ

➔ **No** Does not assign IRQ to a PCI VGA card even if the card requests an IRQ

➔ **Palette Snooping [Disabled]**

Use the **Palette Snooping** option to enable or disable the palette snooping function.

➔ **Disabled** **DEFAULT** Unless the VGA card manufacturer requires palette snooping to be enabled, this option should be disabled.

➔ **Enabled** PCI devices are informed that an ISA based Graphics device is installed in the system so the ISA based Graphics card functions correctly. This does not necessarily indicate a physical ISA adapter card. The graphics chipset can be mounted on a PCI card. Always check with the adapter card manual first, before modifying the default settings in the BIOS.

➔ **PCI IDE BusMaster [Disabled]**

Use the **PCI IDE BusMaster** BIOS option to enable or prevent PCI IDE busmastering.

➔ **Disabled** **DEFAULT** Busmastering is prevented

➔ **Enabled** IDE controller on the PCI local bus has mastering capabilities

➔ **OffBoard PCI/ISA IDE Card [Auto]**

Use the **OffBoard PCI/ISA IDE Card** BIOS option to select the **OffBoard PCI/ISA IDE Card**.

➔ **Auto** **DEFAULT** The location of the Off Board PCI IDE adapter card is automatically detected by the AMIBIOS.

➔ **PCI Slot 1** PCI Slot 1 is selected as the location of the OffBoard PCI IDE adapter card. Only select this slot if the adapter card is installed in PCI Slot 1.

➔ **PCI Slot 2** PCI Slot 2 is selected as the location of the OffBoard PCI IDE adapter card. Only select this slot if the

adapter card is installed in PCI Slot 2.

➔ **PCI Slot 3** PCI Slot 3 is selected as the location of the OffBoard PCI IDE adapter card. Only select this slot if the adapter card is installed in PCI Slot 3.

➔ **PCI Slot 4** PCI Slot 4 is selected as the location of the OffBoard PCI IDE adapter card. Only select this slot if the adapter card is installed in PCI Slot 4.

➔ **PCI Slot 5** PCI Slot 5 is selected as the location of the OffBoard PCI IDE adapter card. Only select this slot if the adapter card is installed in PCI Slot 5.

➔ **PCI Slot 6** PCI Slot 6 is selected as the location of the OffBoard PCI IDE adapter card. Only select this slot if the adapter card is installed in PCI Slot 6.

➔ **IRQ# [Available]**

Use the **IRQ#** address to specify what IRQs can be assigned to a particular peripheral device.

➔ **Available** **DEFAULT** The specified IRQ is available to be used by PCI/PnP devices

➔ **Reserved** The specified IRQ is reserved for use by Legacy ISA devices

Available IRQ addresses are:

- IRQ3
- IRQ4
- IRQ5
- IRQ7
- IRQ9

- IRQ10
- IRQ 11
- IRQ 14
- IRQ 15

➔ **DMA Channel# [Available]**

Use the **DMA Channel#** option to assign a specific DMA channel to a particular PCI/PnP device.

➔ **Available**	**DEFAULT**	The specified DMA is available to be used by PCI/PnP devices
➔ **Reserved**		The specified DMA is reserved for use by Legacy ISA devices

Available DMA Channels are:

- DM Channel 0
- DM Channel 1
- DM Channel 3
- DM Channel 5
- DM Channel 6
- DM Channel 7

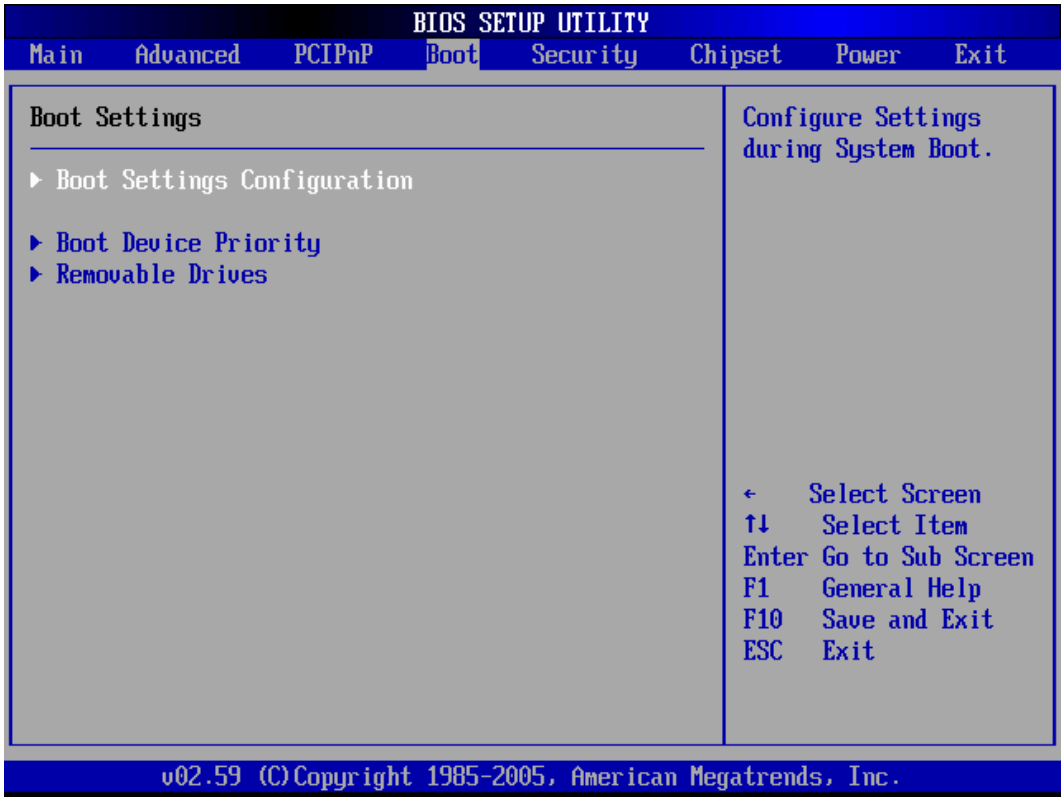
➔ **Reserved Memory Size [Disabled]**

Use the **Reserved Memory Size** BIOS option to specify the amount of memory that should be reserved for legacy ISA devices.

➔ **Disabled**	**DEFAULT**	No memory block reserved for legacy ISA devices
➔ **16K**		16KB reserved for legacy ISA devices
➔ **32K**		32KB reserved for legacy ISA devices
➔ **64K**		54KB reserved for legacy ISA devices

4.5 Boot

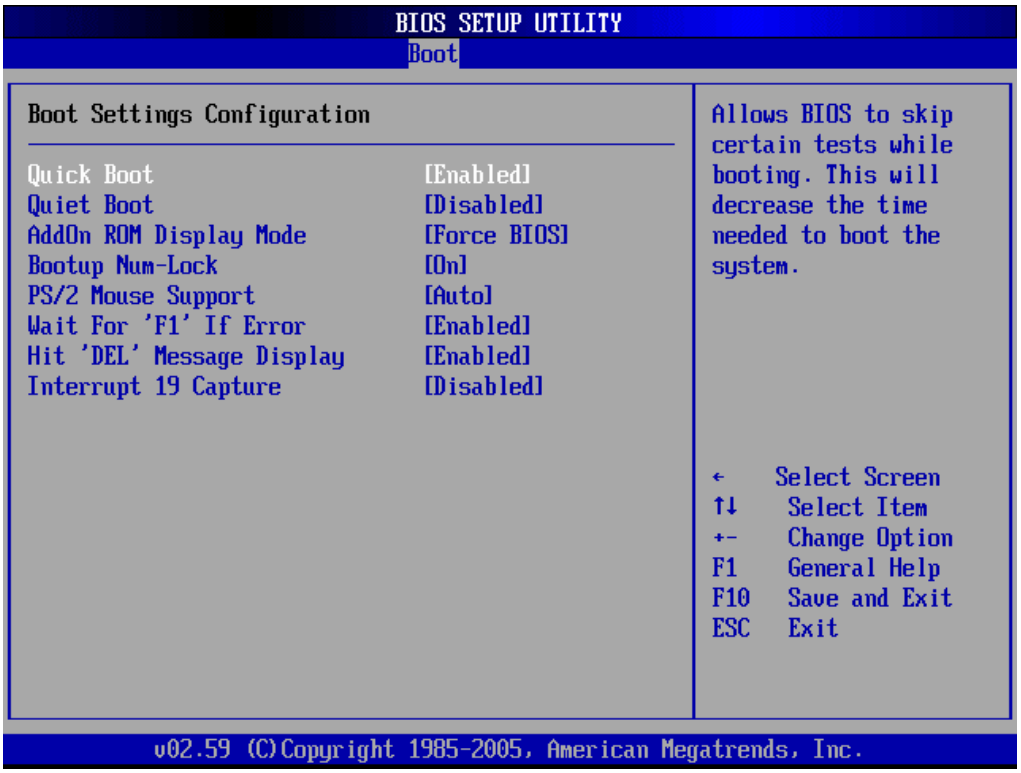
Use the **Boot** menu (**BIOS Menu 13**) to configure system boot options.



BIOS Menu 13: Boot

4.5.1 Boot Settings Configuration

Use the **Boot Settings Configuration** menu (**BIOS Menu 14**) to configure advanced system boot options.


BIOS SETUP UTILITY
Boot
Boot Settings Configuration
Quick Boot [Enabled]
Quiet Boot [Disabled]
AddOn ROM Display Mode [Force BIOS]
Bootup Num-Lock [On]
PS/2 Mouse Support [Auto]
Wait For 'F1' If Error [Enabled]
Hit 'DEL' Message Display [Enabled]
Interrupt 19 Capture [Disabled]
Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.
← Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
v02.59 (C)Copyright 1985-2005, American Megatrends, Inc.

BIOS Menu 14: Boot Settings Configuration

➔ **Quick Boot [Enabled]**

Use the **Quick Boot** BIOS option to make the computer speed up the boot process.

➔ **Disabled**		No POST procedures are skipped
➔ **Enabled**	**DEFAULT**	Some POST procedures are skipped to decrease the system boot time

➔ **Quiet Boot [Disabled]**

Use the **Quiet Boot** BIOS option to select the screen display when the system boots.

➔ **Disabled**	**DEFAULT**	Normal POST messages displayed
➔ **Enabled**		OEM Logo displayed instead of POST messages

➔ **AddOn ROM Display Mode [Force BIOS]**

Use the **AddOn ROM Display Mode** option to allow add-on ROM (read-only memory) messages to be displayed.

➔ **Force BIOS**	**DEFAULT**	The system forces third party BIOS to display during system boot.
➔ **Keep Current**		The system displays normal information during system boot.

➔ **Bootup Num-Lock [On]**

Use the **Bootup Num-Lock** BIOS option to specify if the number lock setting must be modified during boot up.

➔ **Off**		Does not enable the keyboard Number Lock automatically. To use the 10-keys on the keyboard, press the Number Lock key located on the upper left-hand corner of the 10-key pad. The Number Lock LED on the keyboard lights up when the Number Lock is engaged.
➔ **On**	**DEFAULT**	Allows the Number Lock on the keyboard to be enabled automatically when the computer system boots up. This allows the immediate use of the 10-key numeric keypad located on the right side of the keyboard. To confirm this, the Number Lock LED light on the keyboard is lit.

➔ **PS/2 Mouse Support [Auto]**

Use the **PS/2 Mouse Support** option adjusts PS/2 mouse support capabilities.

➔ **Disabled**	PS/2 mouse support is disabled and prevented from using system resources.

➔ **Enabled** Allows the system to use a PS/2 mouse.

➔ **Auto** **DEFAULT** Allows the system to automatically detect if a PS/2 mouse is being used.

➔ **Wait For 'F1' If Error [Enabled]**

Use the **Wait For 'F1' if Error** option to specify how the system responds when the system detects an error on boot up.

➔ **Disabled** If there is an error when booting up, the system does not wait for user intervention but continues to boot up in the operating system. Only use this setting if there is a known reason for a BIOS error to appear. An example would be a system administrator must remote boot the system. The computer system does not have a keyboard currently attached.

➔ **Enabled** **DEFAULT** If there is an error during boot up, the system waits for a user to press "F1" and enter the BIOS to rectify the problem. The BIOS can then be adjusted to the correct settings.

➔ **Hit 'DEL' Message Display [Enable]**

Use the **Hit "DEL" Message Display** option to specify whether the instruction to hit the delete button to enter BIOS during POST appears or not.

➔ **Disabled** No message displayed during POST

➔ **Enabled** **DEFAULT** Displays "**Press DEL to run Setup**" message in POST

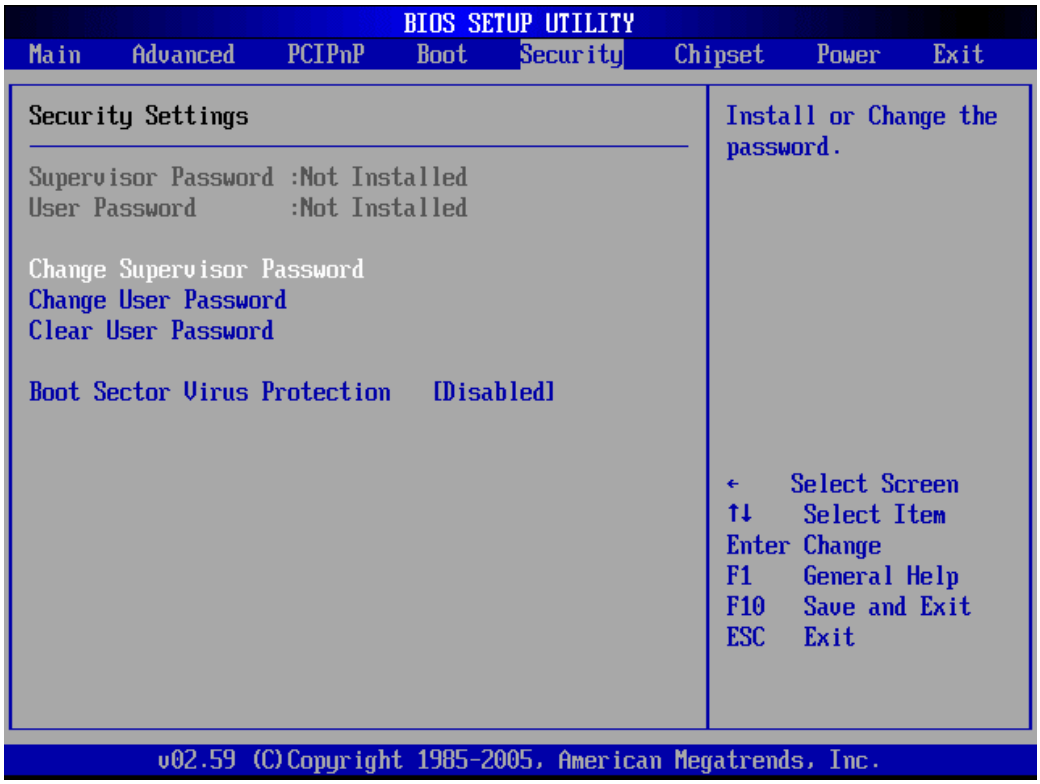
➔ **Interrupt 19 Capture [Disabled]**

Use the **Interrupt 19 Capture** option to allow optional ROMs such as network controllers to trap BIOS interrupt 19.

➔	**Disabled**	**DEFAULT**	Does not allow optional ROM to trap interrupt 19
➔	**Enabled**		Allows optional ROM to trap interrupt 19

4.6 Security

Use the **Security** menu (**BIOS Menu 15**) to set system and user passwords.



BIOS Menu 15: Security

➔ Change Supervisor Password

Use the **Change Supervisor Password** to set or change a supervisor password. The default for this option is **Not Installed**. If a supervisor password must be installed, select

this field and enter the password. After the password has been added, **Install** appears next to **Change Supervisor Password**.

➔ **Change User Password**

Use the **Change User Password** to set or change a user password. The default for this option is **Not Installed**. If a user password must be installed, select this field and enter the password. After the password has been added, **Install** appears next to **Change User Password.**

➔ **Clear User Password**

Use the **Clear User Password** to clear a user password.

➔ **Boot Sector Virus Protection [Disabled]**

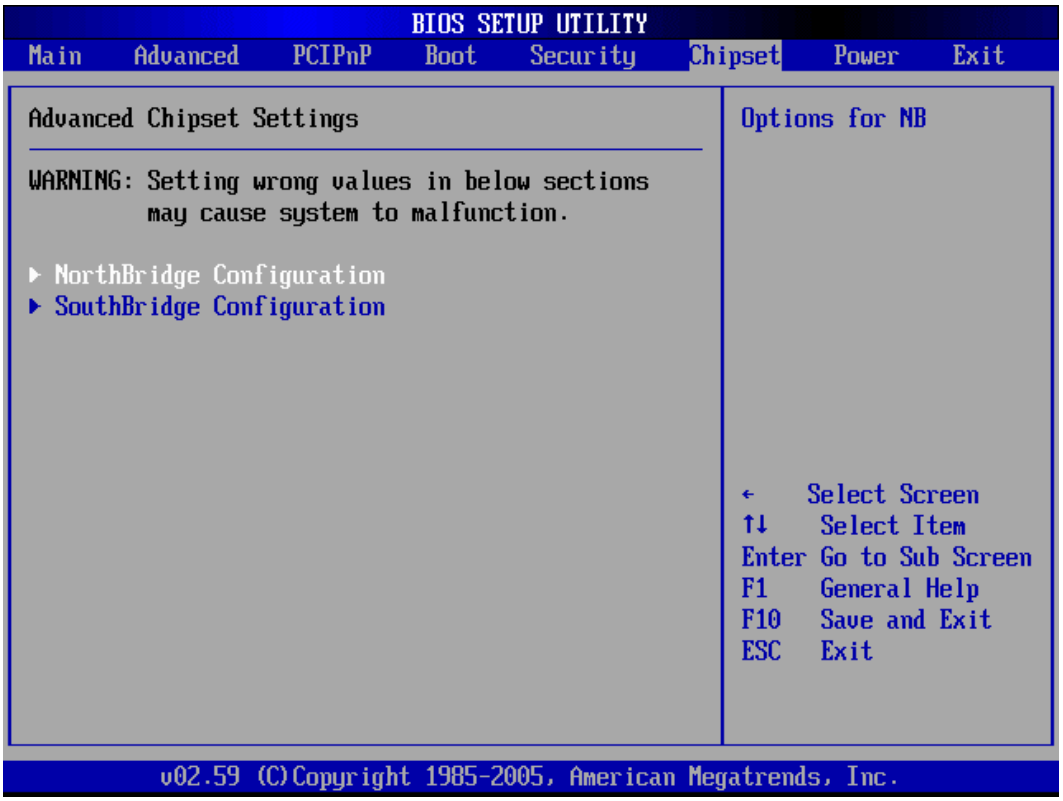
➔ **Disabled**	**DEFAULT**	Disables the boot sector virus protection
➔ **Enabled**		Enables the boot sector virus protection

4.7 Chipset

Use the **Chipset** menu (**BIOS Menu 16**) to access the NorthBridge and SouthBridge configuration menus

WARNING!

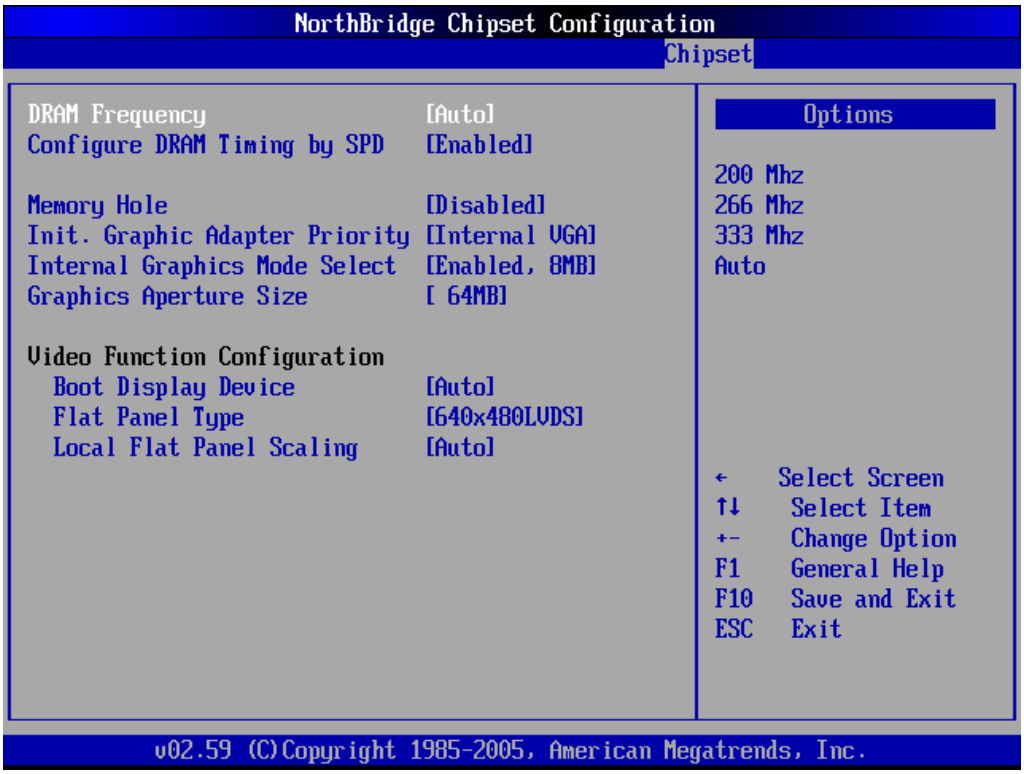
Setting the wrong values for the Chipset BIOS selections in the Chipset BIOS menu may cause the system to malfunction.



BIOS Menu 16: Chipset

4.7.1 NorthBridge Configuration

Use the **NorthBridge Configuration** menu (**BIOS Menu 17**) to configure the northbridge chipset.



BIOS Menu 17:NorthBridge Chipset Configuration

➔ **DRAM Frequency [Auto]**

Use the **DRAM Frequency** option to specify the DRAM frequency or allow the system to automatically detect the DRAM frequency.

➔ **200MHz**		Sets the DRAM frequency to 200MHz
➔ **266MHz**		Sets the DRAM frequency to 266MHz
➔ **333MHz**		Sets the DRAM frequency to 333MHz
➔ **Auto**	**DEFAULT**	Automatically selects the DRAM frequency

➔ **Configure DRAM Timing by SPD [Enabled]**

Use the **Configure DRAM Timing by SPD** option to determine if the system uses the SPD (Serial Presence Detect) EEPROM to configure the DRAM timing. The SPD EEPROM contains all necessary DIMM specifications including the speed of the individual

components such as CAS and bank cycle time as well as valid settings for the module and the manufacturer's code. The SPD enables the BIOS to read the spec sheet of the DIMMs on boot-up and then adjust the memory timing parameters accordingly.

➔ **Disabled**		DRAM timing parameters are manually set using the DRAM sub-items
➔ **Enabled**	**DEFAULT**	DRAM timing parameter are set according to the DRAM Serial Presence Detect (SPD)

If the **Configure DRAM Timing by SPD** option is disabled, the following configuration options appear.

- DRAM CAS# Latency [3]
- DRAM RAS# to CAS# Delay [5 DRAM Clocks]
- DRAM RAS# Precharge [5 DRAM Clocks]
- DRAM RAS# Activate to Precha [15 DRAM Clocks]

➔ **Memory Hole [Disabled]**

Use the **Memory Hole** option to reserve memory space between 15MB and 16MB for ISA expansion cards that require a specified area of memory to work properly. If an older ISA expansion card is used, please refer to the documentation that came with the card to see if it is necessary to reserve the space.

➔ **Disabled**	**DEFAULT**	Memory is not reserved for ISA expansion cards
➔ **15MB – 16MB**		Between 15MB and 16MB of memory is reserved for ISA expansion cards

➔ **Init. Graphic Adapter Priority [Internal VGA]**

The **Init. Graphic Adapter Priority** option selects the graphics controller the system uses as a primary boot device. The options are:

- Internal VGA (Default)

- PCI/Int-VGA

➔ **Internal Graphics Mode Select [Enable, 8MB]**

Use the **Internal Graphic Mode Select** option to specify the amount of system memory that can be used by the Internal graphics device.

➔ **Disable**		
➔ **Enable, 1MB**		1MB of memory used by internal graphics device
➔ **Enable, 4MB**		4MB of memory used by internal graphics device
➔ **Enable, 8MB**	**DEFAULT**	8MB of memory used by internal graphics device
➔ **Enable, 16MB**		16MB of memory used by internal graphics device
➔ **Enable, 32MB**		32MB of memory used by internal graphics device

➔ **Graphics Aperture Size [64MB]**

The **Graphics Aperture Size** option selects the size of the AGP aperture. The aperture is a portion of the PCI memory address range dedicated as graphics memory address space.

➔ **64MB**	**DEFAULT**	Graphics aperture size set as 64MB
➔ **128MB**		Graphics aperture size set as 128MB
➔ **256MB**		Graphics aperture size set as 256MB

➔ **Boot Display Device [Auto]**

The **Boot Display Device** BIOS option selects the display device the system uses when it boots. The available options are listed below:

- Auto (Default)
- CRT on Port 0
- LFP on Port 2

- LFP on Port 3
- DFP on Port 2
- DFP on Port 3
- TV on Port 2
- TV on Port 3
- CRT-Port 0 & CRT-Port 2
- CRT-Port 0 & CRT-Port 3
- CRT-Port 0 & LFP-Port 2
- CRT-Port 0 & LFP-Port 3
- CRT-Port 0 & DFP-Port 2
- CRT-Port 0 & DFP-Port 3
- DFP-Port 2 & DFP-Port 3

➔ **Flat Panel Type [800x600 18 bit LVDS]**

The **Flat Panel Type** BIOS option specifies the flat panel PC type being used.

NOTE:

Please refer to the technical documents that came with the flat panel PC to ensure the correct settings are selected.

The following options are available:

- 640x480 LVDS
- 800x600 LVDS
- 1024x768 24bit LVDS
- 1280x1024 LVDS
- 1024x768 18 bit LVDS
- 1600x1200 LVDS
- 800x600 24bit LVDS
- 800x600 18bit LVDS (Default)
- 1024x768 36bit LVDS
- Type 12
- Type 13

- Type 14
- Type 15
- Type 16

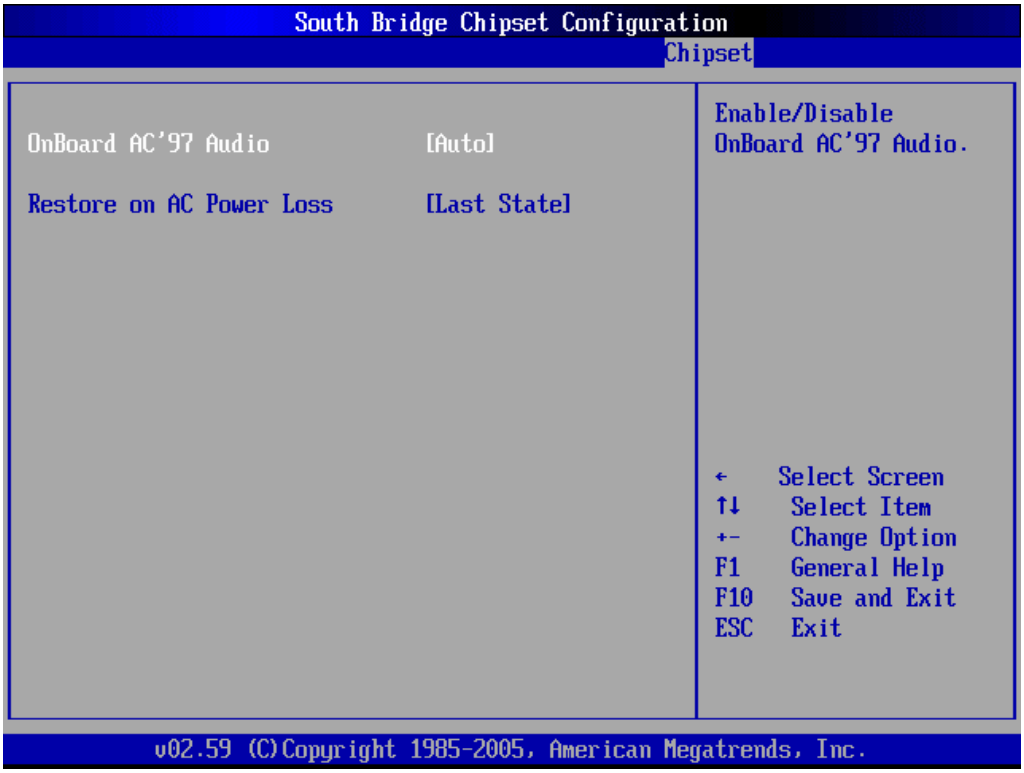
➔ **Local Flat Panel Scaling [Auto]**

The **Local Flat Panel Scaling** option selects the mode of the local flat panel scaling.

➔ **Auto**	**DEFAULT**	Automatically scale the connected local flat panel.
➔ **Forced Scaling**		The connected local flat panel is forced to scale.
➔ **Disabled**		Disable the local flat panel scaling.

4.7.2 South Bridge Configuration

The **South Bridge Intel ICH4 Configuration** menu (**BIOS Menu 18**) the southbridge chipset to be configured.



BIOS Menu 18:SouthBridge Chipset Configuration

➔ **OnBoard AC97 Audio DEVICE**

The **OnBoard AC97 Audio DEVICE** option enables or disables the AC'97 CODEC.

➔ **Auto**	**DEFAULT**	The onboard AC'97 automatically detected and enabled
➔ **Disabled**		The onboard AC'97 is disabled

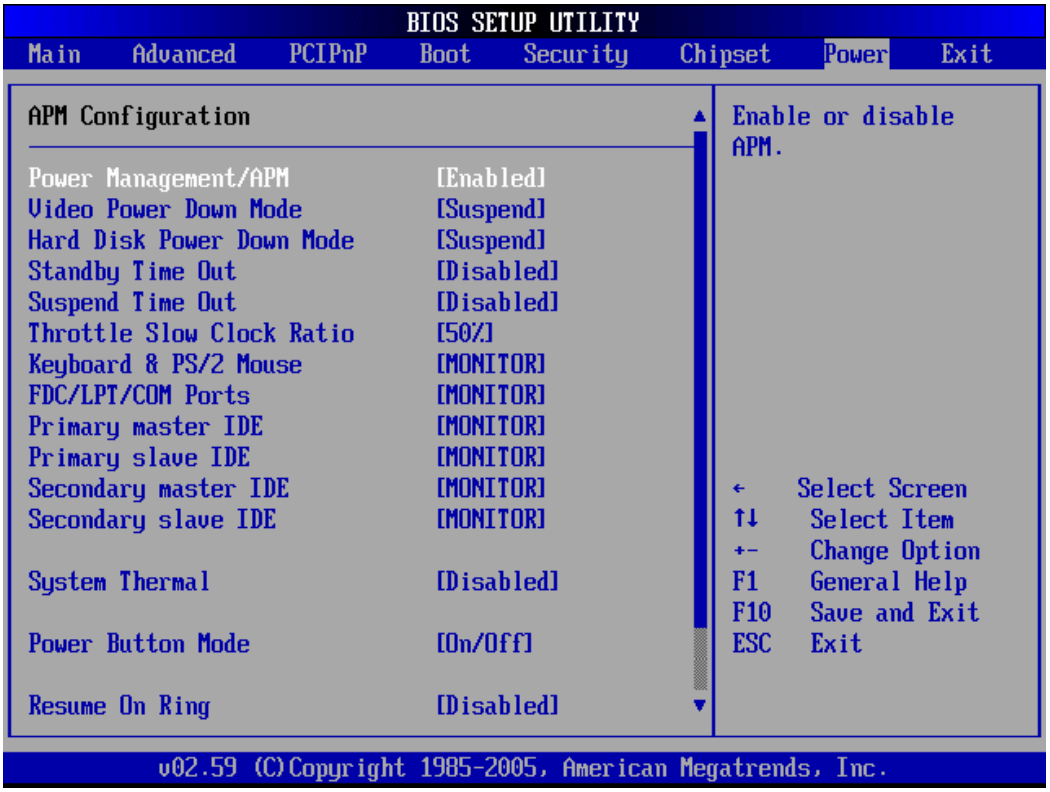
➔ **Restore on AC Power Loss [Last State]**

The Restore on AC Power Loss BIOS option specifies what state the system returns to if there is a sudden loss of power to the system.

➔ **Power Off**		The system remains turned off
➔ **Power On**		The system turns on
➔ **Last State**	**DEFAULT**	The system returns to its previous state. If it was on, it turns itself on. If it was off, it remains off.

4.8 Power Key

The **Power** menu (**BIOS Menu 19**) allows the advanced power management options to be configured.


BIOS SETUP UTILITY
Main Advanced PCIPnP Boot Security Chipset Power Exit
APM Configuration
Power Management/APM [Enabled]
Video Power Down Mode [Suspend]
Hard Disk Power Down Mode [Suspend]
Standby Time Out [Disabled]
Suspend Time Out [Disabled]
Throttle Slow Clock Ratio [50%]
Keyboard & PS/2 Mouse [MONITOR]
FDC/LPT/COM Ports [MONITOR]
Primary master IDE [MONITOR]
Primary slave IDE [MONITOR]
Secondary master IDE [MONITOR]
Secondary slave IDE [MONITOR]
System Thermal [Disabled]
Power Button Mode [On/Off]
Resume On Ring [Disabled]
Enable or disable APM.
← Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
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BIOS Menu 19:Power

➔ **Power Management/APM [Enabled]**

The **Power Management/APM** BIOS option allows access to the advanced power management features. If this option is disabled, the only other option on the screen is the "**Resume On RTC Alarm**."

➔ **Disabled** Disables the Advanced Power Management (APM) feature

➔ **Enabled** **DEFAULT** Enables the APM feature

➔ **Video Power Down Mode [Suspend]**

The **Video Power Down Mode** BIOS option specifies in what system mode the video device can be turned off.

➔ **Disabled**		The Video cannot be turned off in the Suspend or Standby mode
➔ **Standby**		The video can be turned off in the Standby mode
➔ **Suspend**	**DEFAULT**	The video can be turned off in the Suspend mode

➔ **Hard Disk Power Down Mode [Suspend]**

The **Hard Disk Power Down Mode** BIOS specifies in what system mode the hard disk device can be turned off.

➔ **Disabled**		The hard disk cannot be turned off in the Suspend or Standby mode
➔ **Standby**		The hard disk can be turned off in the Standby mode
➔ **Suspend**	**DEFAULT**	The hard disk can be turned off in the Suspend mode

➔ **Standby Time Out [Disabled]**

The **Power Management/APM** option must be enabled in order to change this configuration option. The **Standby Time Out** option specifies what length of time without activity on certain components will place those components in a standby state. The options are:

- Disabled (Default)
- 1 Min
- 2 Min
- 4 Min
- 8 Min
- 10 Min
- 20 Min
- 30 Min
- 40 Min
- 50 Min
- 60 Min

➔ **Suspend Time Out [Disabled]**

The **Power Management/APM** option must be enabled in order to change this configuration option. The **Suspend Time Out** option specifies what length of time without activity on certain components will place those components in a suspended state. The options are:

- Disabled (Default)
- 1 Min
- 2 Min
- 4 Min
- 8 Min
- 10 Min
- 20 Min
- 30 Min
- 40 Min
- 50 Min
- 60 Min

➔ **Throttle Slow Clock Ratio [50%]**

The **Power Management/APM** option must be enabled in order to change this configuration option. The **Throttle Slow Clock Ratio** option allows the BIOS to throttle the CPU clock to reduce power consumption. For example, a throttle ratio of 50% means the BIOS throttles back the CPU clock to operate at 50% of its normal operational time. Throttle slow clock ratio options are:

- 87.5%
- 75%
- 62.5%
- 50% (default)
- 37.5%
- 25%
- 12.5%

➔ **Keyboard & PS/2 Mouse [MONITOR]**

The **Power Management/APM** option must be enabled in order to change this configuration option. The **keyboard & PS/2 mouse** option enables monitoring of activity on the keyboard and PS/2 mouse ports and rouses the system from a sleep or suspend state.

➔ **Ignore**		The system does not monitor the keyboard and PS/2 mouse ports and does not rouse the system from a sleep or suspend state when an IRQ is detected.
➔ **Monitor**	**DEFAULT**	The system monitors the keyboard and PS/2 mouse ports and rouses the system from a sleep or suspend state when an IRQ is detected.

➔ **FDC/LPT/COM Ports [MONITOR]**

The **Power Management/APM** option must be enabled in order to change this configuration option. The **FDC/LPT/COM Ports** option enables monitoring of activity on the FDC/LPT/COM ports and rouses the system from a sleep or suspend state.

➔ **Ignore**		The system does not monitor the FDC/LPT/COM ports and does not rouse the system from a sleep or suspend state when an IRQ is detected.
➔ **Monitor**	**DEFAULT**	The system monitors the FDC/LPT/COM ports and rouses the system from a sleep or suspend state when an IRQ is detected.

➔ **Primary master IDE [MONITOR]**

The **Power Management/APM** option must be enabled in order to change this configuration option. The **Primary Master IDE** option enables monitoring of activity of the primary master IDE device and rouses the system from a sleep or suspend state.

➔ **Ignore** The system does not monitor the primary master IDE device and does not rouse the system from a sleep or suspend state when an IRQ is detected.

➔ **Monitor** **DEFAULT** The system monitors the primary master IDE device and rouses the system from a sleep or suspend state when an IRQ is detected.

➔ **Primary slave IDE [MONITOR]**

The **Power Management/APM** option must be enabled in order to change this configuration option. The **Primary Slave IDE** option enables monitoring of activity of the primary slave IDE device and rouses the system from a sleep or suspend state.

➔ **Ignore** The system does not monitor the primary slave IDE device and does not rouse the system from a sleep or suspend state when an IRQ is detected.

➔ **Monitor** **DEFAULT** The system monitors the primary slave IDE device and rouses the system from a sleep or suspend state when an IRQ is detected.

➔ **Secondary master IDE [MONITOR]**

The **Power Management/APM** option must be enabled in order to change this configuration option. The **Secondary Master IDE** option enables monitoring of activity of the secondary master IDE device and rouses the system from a sleep or suspend state.

➔ **Ignore** The system does not monitor the secondary master IDE device and does not rouse the system from a sleep or suspend state when an IRQ is detected.

➔ **Monitor** **DEFAULT** The system monitors the secondary master IDE device and rouses the system from a sleep or suspend state

when an IRQ is detected.

➔ **Secondary slave IDE [MONITOR]**

The **Power Management/APM** option must be enabled in order to change this configuration option. The **Secondary Slave IDE** option enables monitoring of activity of the secondary slave IDE device and rouses the system from a sleep or suspend state.

➔ **Ignore**	**DEFAULT**	The system does not monitor the secondary slave IDE device and does not rouse the system from a sleep or suspend state when an IRQ is detected.
➔ **Monitor**		The system monitors the secondary slave IDE device and rouses the system from a sleep or suspend state when an IRQ is detected.

➔ **System Thermal [Disabled]**

The **System Thermal** BIOS option enables the manual setting of the **Thermal Active Temperature** and the **THRM throttle Ratio** BIOS options.

➔ **Disabled**	**DEFAULT**	**Thermal Active Temperature** and the **THRM throttle Ratio** BIOS options cannot be set manually.
➔ **Enabled**		**Thermal Active Temperature** and the **THRM throttle Ratio** BIOS options can be set manually.

➔ **Power Button Mode [On/Off]**

The **Power Button Mode** BIOS specifies how the power button functions.

➔ **On/Off**	**DEFAULT**	When the power button is pressed the system is either turned on or off
➔ **Suspend**		When the power button is pressed the system goes into

suspend mode

➔ **Resume on Ring [Disabled]**

The **Resume on Ring** BIOS option specifies if the system will be roused from a suspended or standby state when there is activity on the RI (ring in) modem line. That is, the system will be roused by an incoming call on a modem.

➔	**Disabled**	**DEFAULT**	Wake event not generated by an incoming call
➔	**Enabled**		Wake event generated by an incoming call

➔ **Resume on Lan [Disabled]**

The **Resume on Lan** BIOS option specifies if the system is roused from a suspended or standby state when there is activity on the LAN.

➔	**Disabled**	**DEFAULT**	Wake event not generated by LAN activity
➔	**Enabled**		Wake event generated by LAN activity

➔ **Resume on PME# [Disabled]**

The **Resume on PME#** BIOS option specifies if the system will be roused from a suspended or standby state when there is activity on the PCI PME (power management event) controller.

➔	**Disabled**	**DEFAULT**	Wake event not generated by PCI PME controller activity
➔	**Enabled**		Wake event generated by PCI PME controller activity

➔ **Resume On RTC Alarm [Disabled]**

The **Resume On RTC Alarm** determines when the computer is roused from a suspended state.

➔ **Disabled** **DEFAULT** The real time clock (RTC) cannot generate a wake event

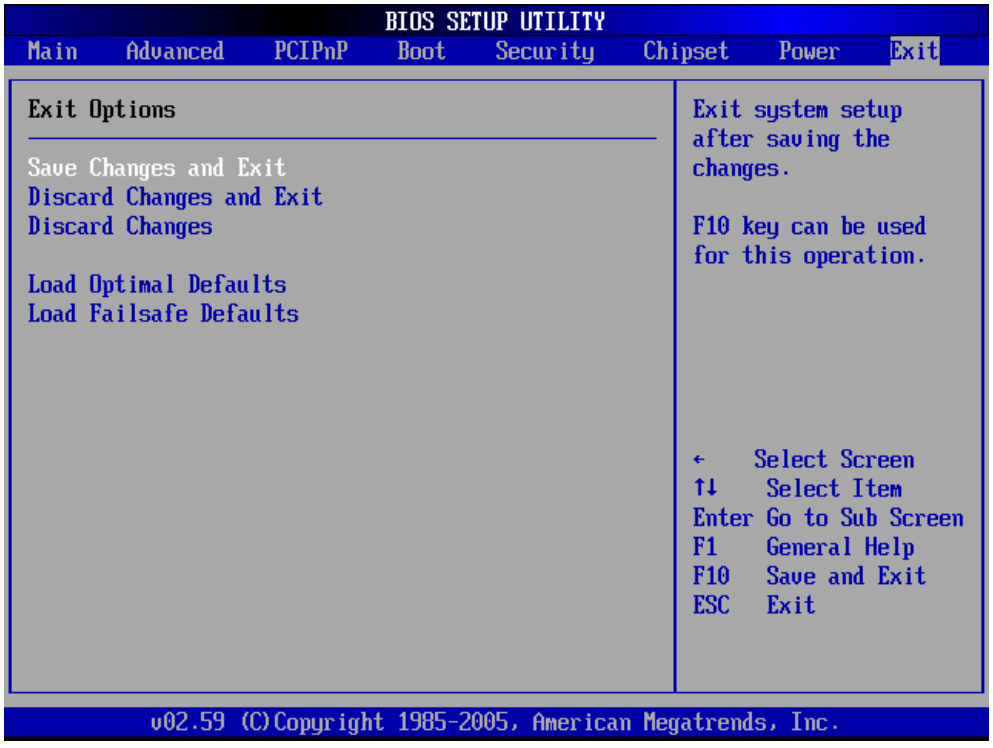
➔ **Enabled** If selected, the following appears with values that can be selected:

- ➔ **RTC Alarm Date (Days)**
- ➔ **System Time**

After setting the alarm, the computer turns itself on from a suspend state when the alarm goes off.

4.9 Exit

The **Exit** menu (**BIOS Menu 20**) loads default BIOS values, optimal failsafe values and to save configuration changes.


BIOS SETUP UTILITY
Main Advanced PCIPnP Boot Security Chipset Power Exit
Exit Options
Save Changes and Exit
Discard Changes and Exit
Discard Changes
Load Optimal Defaults
Load Failsafe Defaults
Exit system setup after saving the changes.
F10 key can be used for this operation.
← Select Screen
↑↓ Select Item
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
ESC Exit
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BIOS Menu 20:Exit

➔ **Save Changes and Exit**

If configuration changes are complete, select this option to save them and exit the BIOS menus.

➔ **Discard Changes and Exit**

If configuration changes are complete but do need to be saved, select this option to exit the BIOS menus.

➔ **Discard Changes**

If configuration changes are complete but do need to be saved but BIOS still needs to be run , select this option.

➔ **Load Optimal Defaults**

This option loads optimal default values for each of the parameters on the Setup menus. **F9 key can be used for this operation.**

➔ **Load Failsafe Defaults**

This option loads failsafe default values for each of the parameters on the Setup menus. **F8 key can be used for this operation.**

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Appendix

A

Interface Connectors

A.1 Peripheral Interface Connectors

The PPC-3712 flat panel PC motherboard, the NANO-8522 comes with a number of peripheral interface connectors and configuration jumpers listed in **Chapter 2**. The pinouts for these connectors are listed below:

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	VCC
3	OUT0	4	OUT1
5	OUT2	6	OUT3
7	IN0	8	IN1
9	IN2	10	IN3

Table A-1: 4-bit GPIO Connector Pinouts

PIN NO.	DESCRIPTION
1	Button 1
2	Button 2

Table A-2: Power Button Connector Pinouts

PIN NO.	DESCRIPTION
1	5VSB
2	GND
3	PSON

Table A-3: Power Connector Pinouts

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	LINE_OUT-R	2	LINE_IN-R
3	GND	4	GND
5	LINE_OUT-L	6	LINE_IN-L
7	GND	8	GND
9	MIC-IN	10	NC

Table A-4: Audio Connector Pinouts

PIN NO.	DESCRIPTION
1	GND
2	GND
3	VCC12
4	VCC12

Table A-5: 12V Power Connector Pinouts

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GROUND	26	VCC-IN CHECK1
2	DATA 3	27	DATA 11
3	DATA 4	28	DATA 12
4	DATA 5	29	DATA 13
5	DATA 6	30	DATA 14
6	DATA 7	31	DATA 15
7	HDC_CS0#	32	HDC_CS1
8	N/C	33	N/C
9	GROUND	34	IOR#
10	N/C	35	IOW#
11	N/C	36	N/C
12	N/C	37	INTERRUPT
13	VCC_COM	38	VCC_COM
14	N/C	39	CSEL
15	N/C	40	N/C
16	N/C	41	HDD_RESET
17	N/C	42	IORDY
18	SA2	43	N/C
19	SA1	44	VCC_COM
20	SA0	45	HDD_ACTIVE#
21	DATA 0	46	N/C
22	DATA 1	47	DATA 8
23	DATA 2	48	DATA 9
24	N/C	49	DATA 10

25	VCC-IN CHECK2	50	GROUND

Table A-6: CFII Socket Pinouts

PIN NO.	DESCRIPTION
1	Fan Speed Detect
2	+12V
3	GND

Table A-7: Fan Connector Pinouts

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RESET#	2	GROUND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GROUND	20	N/C
21	IDE DRQ	22	GROUND
23	IOW#	24	GROUND
25	IOR#	26	GROUND
27	IDE CHRDY	28	GROUND
29	IDE DACK	30	GROUND–DEFAULT
31	INTERRUPT	32	N/C
33	SA1	34	N/C
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD ACTIVE#	40	GROUND
41	VCC	42	VCC
43	GROUND	44	N/C

Table A-8: IDE Connector Pinouts

PIN NO.	DESCRIPTION
1	BKLTCTL
2	GND
3	+12V
4	GND
5	BKLEN

Table A-9: Inverter Connector Pinouts

PIN NO.	DESCRIPTION
1	VCC
2	N/C
3	RXD
4	GND
5	TXD

Table A-10: IR Interface Connector Pinouts

PIN NO.	DESCRIPTION
1	VCC5
2	MOUSE DATA
3	MOUSE CLOCK
4	KEYBOARD DATA
5	KEYBOARD CLOCK
6	GND

Table A-11: Keyboard/Mouse Connector Pinouts

PIN NO.	DESCRIPTION
1	+5V
2	GND
3	VCC5 LED+
4	GND
5	HDD LED+
6	HDD LED-

Table A-12: LED Connector Pinouts

PIN NO.	Description	PIN NO.	Description
2	GND	1	NC
4	AY0-	3	AY0+
6	AY1-	5	AY1+
8	AY2-	7	AY2+
10	AYCLK-	9	AYCLK+
12	AY3-	11	AY3+
14	GND	13	GND
16	BY0-	15	BY0+
18	BY1-	17	BY1+
20	BY2-	19	BY2+
22	BYCLK-	21	BYCLK+
24	BY3-	23	BY3+
26	GND	25	GND
28	LCDVCC	27	LCDVCC
30	LCDVCC	29	LCDVCC

Table A-13: LVDS Connector Pinouts

PIN	DESCRIPTION	PIN	DESCRIPTION
1	STROBE#	14	AUTO FORM FEED #
2	DATA0	15	ERROR#
3	DATA1	16	INITIALIZE#
4	DATA2	17	PRINTER SELECT LN#
5	DATA3	18	GND
6	DATA4	19	GND
7	DATA5	20	GND
8	DATA6	21	GND
9	DATA7	22	GND
10	ACKNOWLEDGE#	23	GND
11	BUSY	24	N/C
12	PAPER EMPTY	25	GND

13	PRINTER SELECT	

Table A-14: Parallel Port Connector Pinouts

PIN	Description	PIN	Description	PIN	Description	PIN	Description
A1	GROUND	B1	NC/SERIRQ	C1	+5V	D1	AD0
A2	VIO	B2	AD2	C2	AD1	D2	+5V
A3	AD5	B3	GND	C3	AD4	D3	AD3
A4	CBE0-	B4	AD7	C4	GND	D4	AD6
A5	GND	B5	AD9	C5	AD8	D5	GND
A6	AD11	B6	VIO	C6	AD10	D6	N66EV
A7	AD14	B7	AD13	C7	GND	D7	AD12
A8	+3.3V	B8	CBE1-	C8	AD15	D8	+3.3V
A9	SERR-	B9	GND	C9	SBO-	D9	PAR
A10	GND	B10	PERR-	C10	+3.3V	D10	SDONE
A11	STOP-	B11	+3.3V	C11	LOCK-	D11	GND
A12	+3.3V	B12	TRDY-	C12	GND	D12	DEVSEL-
A13	FRAME-	B13	GND	C13	IRDY-	D13	+3.3V
A14	GND	B14	AD16	C14	+3.3V	D14	CBE2-
A15	AD18	B15	+3.3V	C15	AD17	D15	GND
A16	AD21	B16	AD20	C16	GND	D16	AD19
A17	+3.3V	B17	AD23	C17	AD22	D17	+3.3V
A18	IDSEL0	B18	GND	C18	IDSEL1	D18	IDSEL2
A19	AD24	B19	CBE3-	C19	VIO	D19	IDSEL3
A20	GND	B20	AD26	C20	AD25	D20	GND
A21	AD29	B21	+5V	C21	AD28	D21	AD27
A22	+5V	B22	AD30	C22	GND	D22	AD31
A23	REQ0-	B23	GND	C23	REQ1-	D23	VIO
A24	GND	B24	REQ2-	C24	+5V	D24	GNT0-
A25	GNT1-	B25	VIO	C25	GNT2-	D25	GND
A26	+5V	B26	PCICLK0	C26	GND	D26	PCICLK1
A27	PCICLK2	B27	+5V	C27	PCICLK3	D27	GND
A28	GND	B28	INTD-	C28	+5V	D28	PCIRST-

A29	+12V	B29	INTA-	C29	INTB-	D29	INTC-
A30	-12v	B30	REQ3-	C30	GNT3-	D30	GND/3.3V

Table A-15: PCI-104 Connector Pinouts

PIN NO.	DESCRIPTION
1	Reset 1
2	Reset 2

Table A-16: Reset Connector Pinouts

PIN NO.	DESCRIPTION
1	GND
2	TX0+
3	TX0-
4	GND
5	RX0-
6	RX0+
7	GND

Table A-17: SATA Connector Pinouts

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD#	2	DSR#
3	RxD	4	RTS#
5	TxD	6	CTS#
7	DTR#	8	RI#
9	GND	10	GND
11	TxD485+	12	TxD485-
13	RxD485+	14	RxD485-

Table A-18: COM2 Connector Pinouts

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD#	2	DSR#
3	RX	4	RTS#

5	TX	6	CTS#
7	DTR#	8	RI#
9	GND	10	GND

Table A-19: COM3 Connector Pinouts

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD#	2	DSR#
3	RX	4	RTS#
5	TX	6	CTS#
7	DTR#	8	RI#
9	GND	10	GND

Table A-20: COM4 Connector Pinouts

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	USBVCC4	2	GND
3	D4F-	4	D5F+
5	D4F+	6	D5F-
7	GND	8	USBVCC4

Table A-21: USB Connector Pinouts

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Appendix

B

BIOS Configuration Options

B.1 BIOS Configuration Options

Below is a list of BIOS configuration options described in **Chapter 4**.

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Appendix

C

Software Drivers

C.1 Introduction

The touch panel controller enables analog resistive touch panels for four-wire, five-wire & eight-wire models. The controller directly communicates with the PC system through the touch panel communications interface. The controller design is superior in sensitivity, accuracy, and friendly operation. The touch panel driver emulates the left mouse button and the right mouse button functions.

The touch panel driver supports the following operating systems:

- Microsoft Windows versions:
  - Microsoft Windows 95
  - Microsoft Windows 98
  - Microsoft Windows ME
  - Microsoft Windows 2000
  - Microsoft Windows NT
  - Microsoft Windows XP
  - Microsoft Windows XP Tablet PC Edition
- Microsoft Windows CE versions:
  - Microsoft Windows CE 2.12
  - Microsoft Windows CE 3.0
  - Microsoft Windows CE. NET
- Linux
- IMac
- DOS.

Driver installation is described below.

C.2 Driver Installation

To install the touch panel software driver, please follow the steps below.

Step 1: Insert the driver CD that came with the PPC-3712 into the CD drive.

Step 2: Once the CD drive is installed, the screen in **Figure C-1** appears.

TouchKit Ver 4.3.0
Win9X / ME
WinNT4
Win2000 / XP
Other Driver
User Manual
Release Note
FAQ
We provide a full range of controllers for both analog resistive and capacitive touch panels.
The resistive controller communicates with the PC system directly through RS232, PS/2 or USB port.
The design is optimized for an accurate, sensitive and quick touch performance as well as an ease of use interface.
The driver supports a set of operating systems, i.e. Windows 95, Windows 98, Windows ME, Windows NT4, Windows 2000, Windows XP, Windows XP Tablet PC Edition, Windows CE 2.12 / 3.0 / .NET, DOS, iMac, RedHat / Mandrake Linux
CopyRight(c) 2000-2005,

Figure C-1: Driver CD Pop Up Screen

Step 3: Select the operating system installed on the system from the menu on the left side of the screen.

NOTE:

The following description is for driver installation using a Windows 2000 OS. If a different OS is installed, please refer to the driver user manual for the relevant OS. The driver user manuals can be accessed by selecting "**User Manual**" from the menu on the left side of the "**Driver CD Pop Up Screen**".

Step 4: Once the OS system is selected, the touch kit setup will prepare the install shield wizard (**Figure C-2**).

Setup
TouchKit Setup is preparing the InstallShield® Wizard, which will guide you through the rest of the setup process. Please wait.

Figure C-2: Install Shield Wizard Preparation

Step 5: After the Install Shield Wizard is ready, a welcome screen appears (**Figure C-3**).

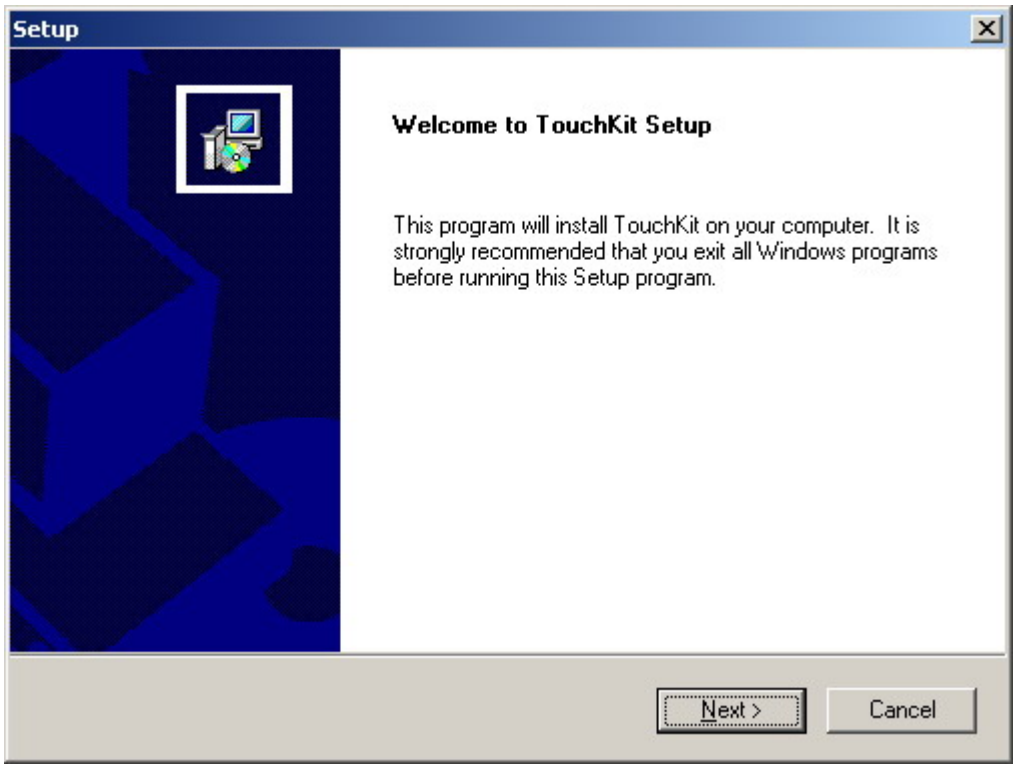
Setup
Welcome to TouchKit Setup
This program will install TouchKit on your computer. It is strongly recommended that you exit all Windows programs before running this Setup program.
Next >
Cancel

Figure C-3: Welcome Screen

Step 6: To continue the installation process click **NEXT**.

Step 7: An Install PS/2 interface driver screen appears (**Figure C-4**). It is not necessary to install the PS/2 interface driver. To continue click **NEXT**.

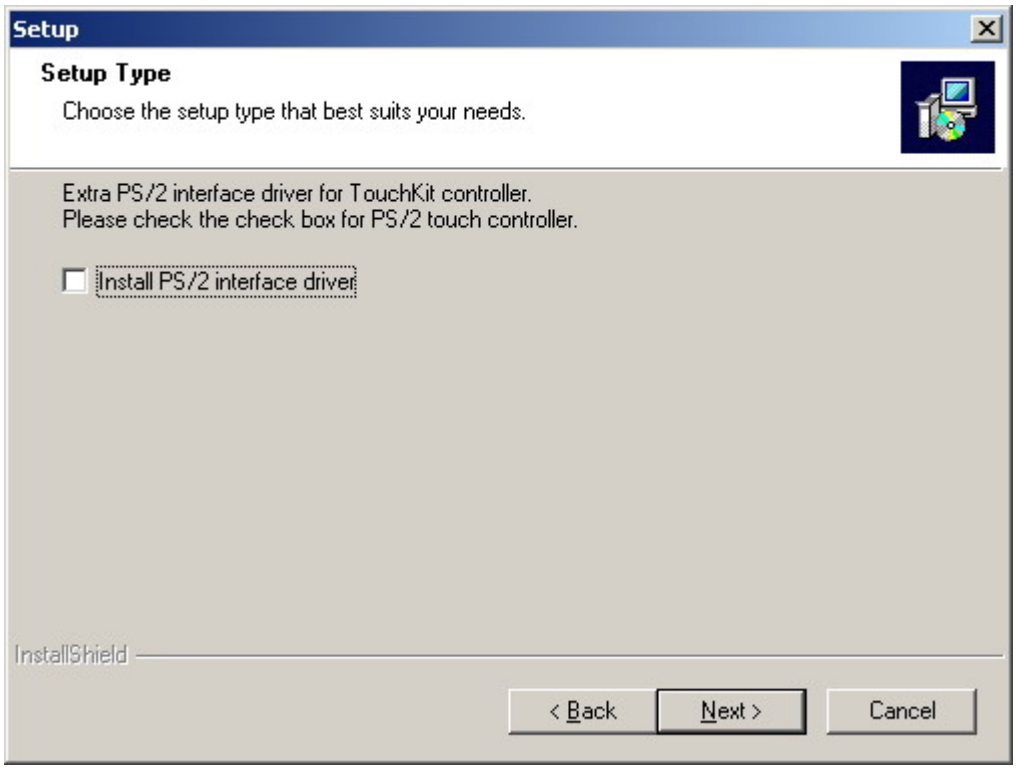
Setup
Setup Type
Choose the setup type that best suits your needs.
Extra PS/2 interface driver for TouchKit controller.
Please check the check box for PS/2 touch controller.
Install PS/2 interface driver
InstallShield
< Back
Next >
Cancel

Figure C-4: Install PS/2 Interface Driver

Step 8: Four point calibration options are then selected. Four point calibrations can be done every time a user boots up, during the next time the system boots or never. Select if and when a four-point calibration should be done. Click **NEXT** to continue.

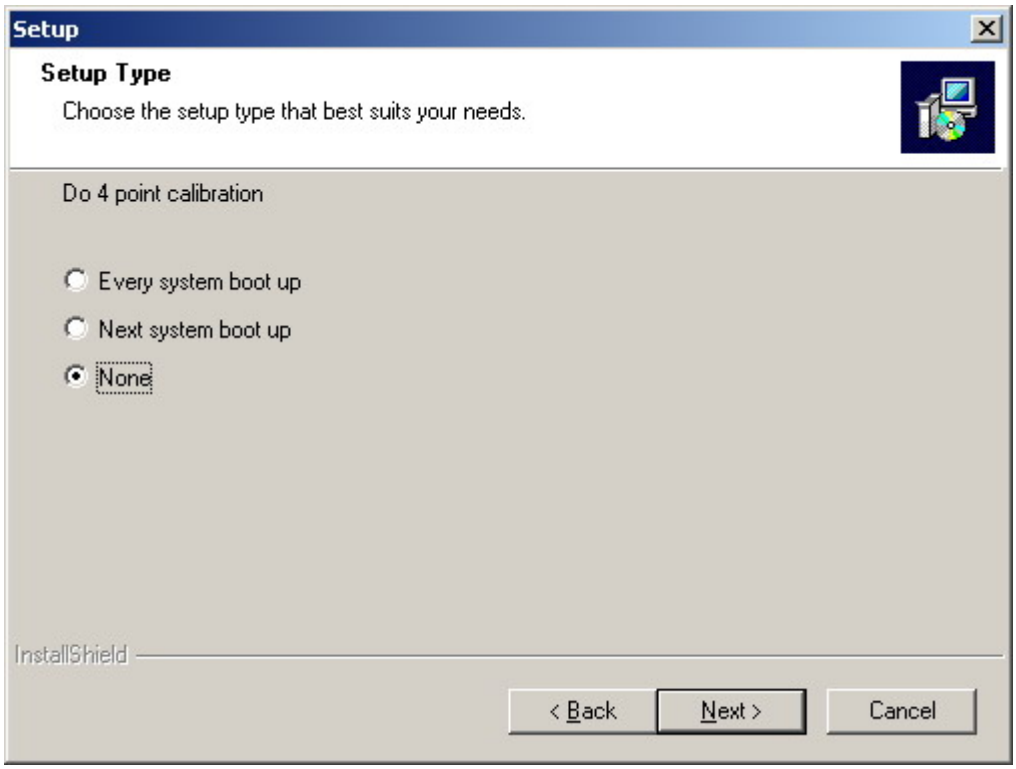

Figure C-5: Install PS/2 Interface Driver

Step 9: The user is then prompted to ensure the touch monitor or the USB for the touch controller is plugged into the system (**Figure C-6**). Once the touch controller is plugged into the system, click "**OK**".

Information
If you are trying to install the USB touch device, please make sure that your touch monitor or touch controller's USB cable is plugged into the computer now.
OK

Figure C-6: Touch Monitor/USB Touch Controller Confirmation

Step 10: The user is then prompted to select a file directory in which the touch kit controller is installed (**Figure C-7**). The default directory is "C:\Program Files\TouchKit." If a different folder must be used, select browse and then select the folder. Once the folder is selected, click **NEXT** to continue.

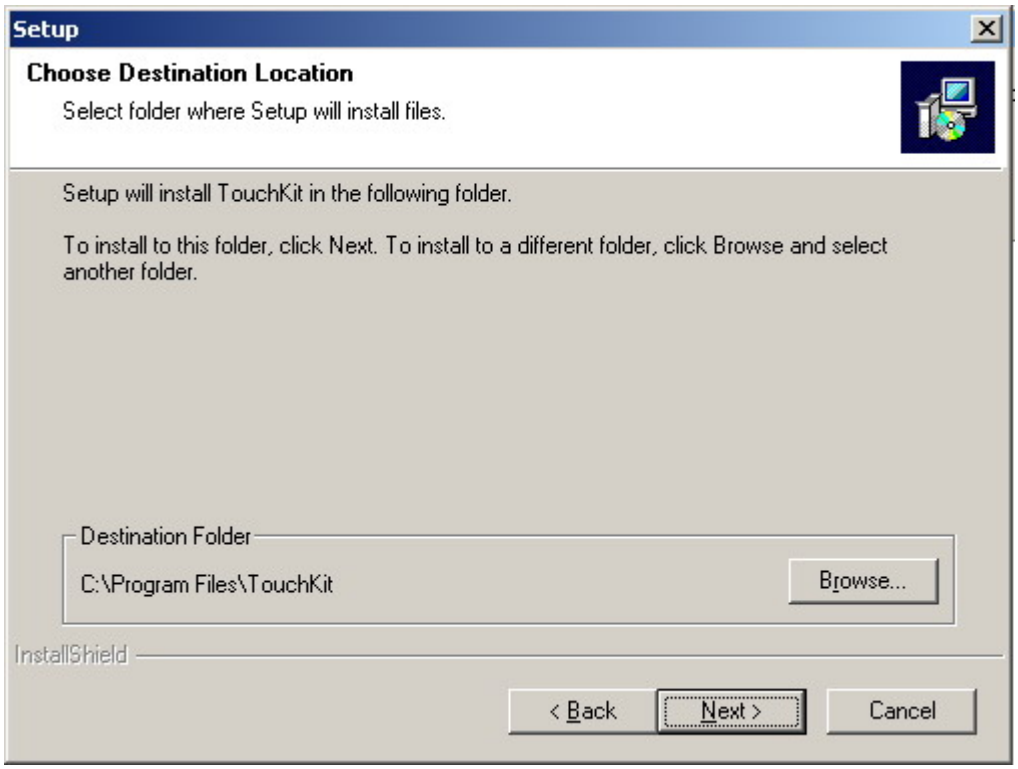
Setup
Choose Destination Location
Select folder where Setup will install files.
Setup will install TouchKit in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\TouchKit
Browse...
InstallShield
< Back
Next >
Cancel

Figure C-7: Controller Installation Directory

Step 11: The user is then prompted to select a file directory in which the program icons are saved (**Figure C-8**). The default folder is “TouchKit.” If a different folder must be used, select a folder from the list shown. Once the folder is selected, click **NEXT** to continue.

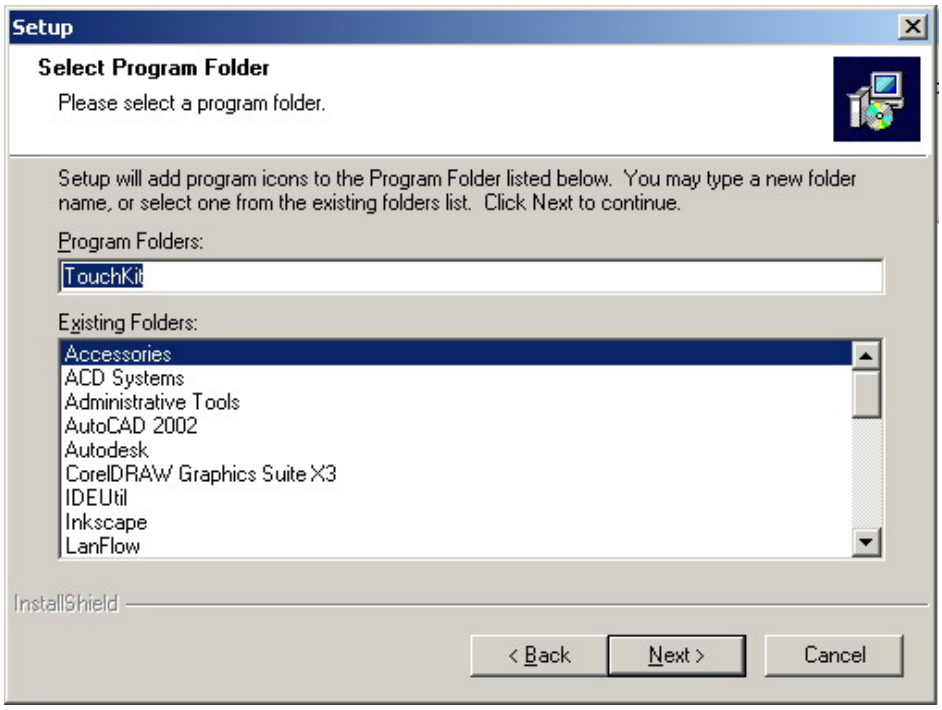

Figure C-8: Program Icon Directory

Step 12: The program then starts installing (**Figure C-9**).

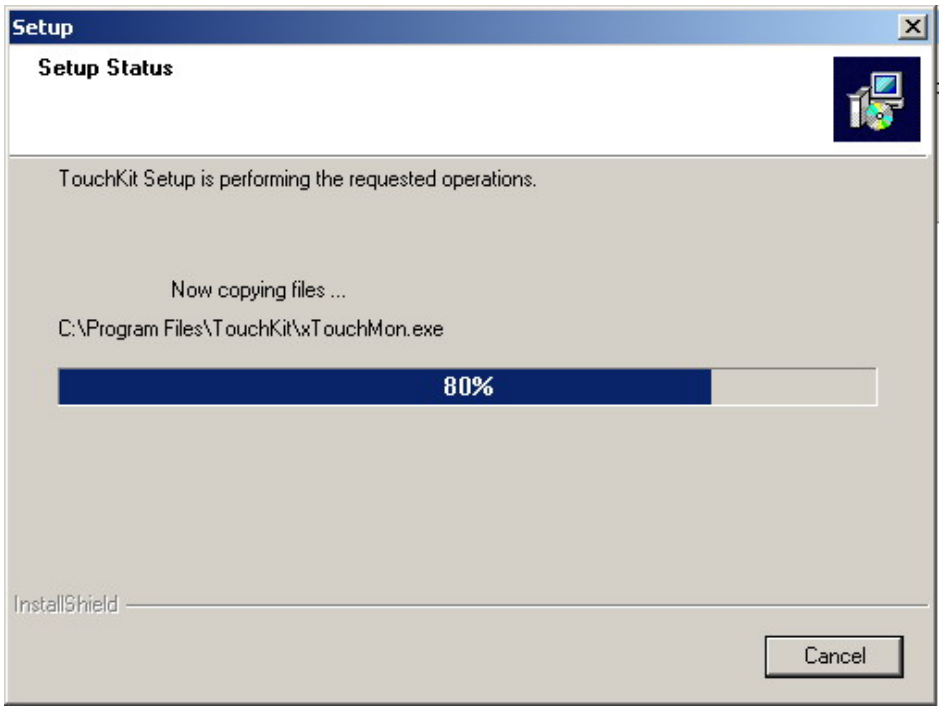

Figure C-9: Installing

Step 13: Once the program is finished installing, the user is prompted to restart the computer now or to restart the computer later (**Figure C-10**). Select when the computer should be restarted and click "**FINISH**" to complete the driver installation procedure.

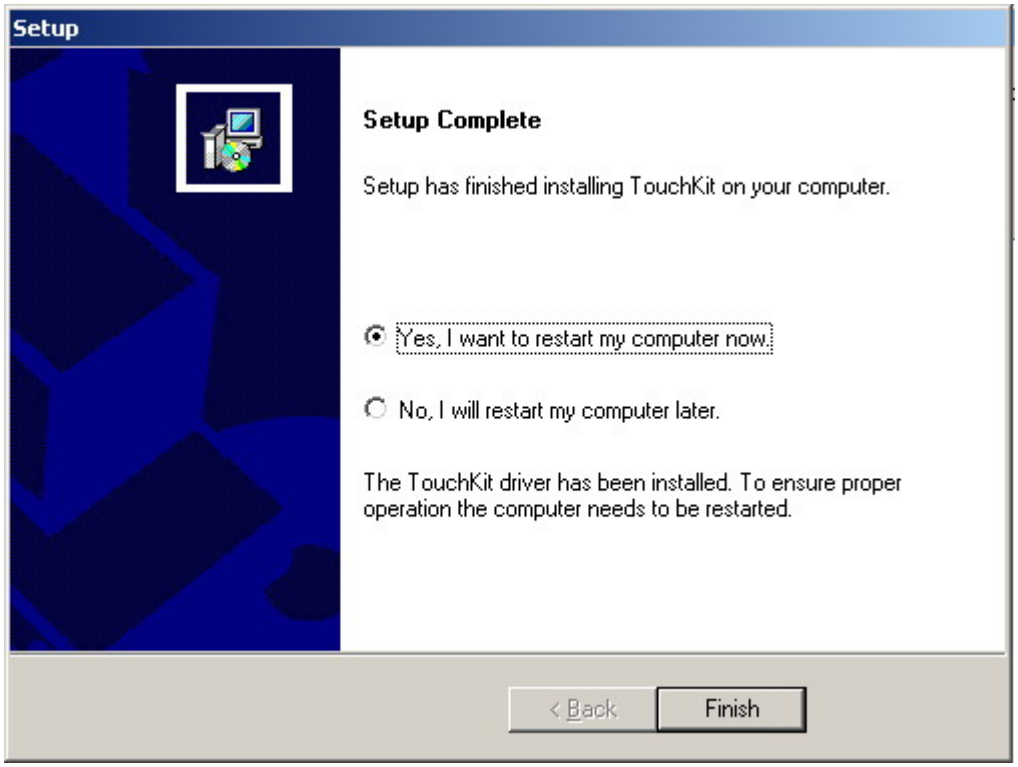
Setup
Setup Complete
Setup has finished installing TouchKit on your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
The TouchKit driver has been installed. To ensure proper operation the computer needs to be restarted.
< Back
Finish

Figure C-10: Installation Complete

C.3 Touch Panel Driver Configuration

To configure the touch panel driver options, refer to the TouchKit user manual located on the driver installation CD.

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